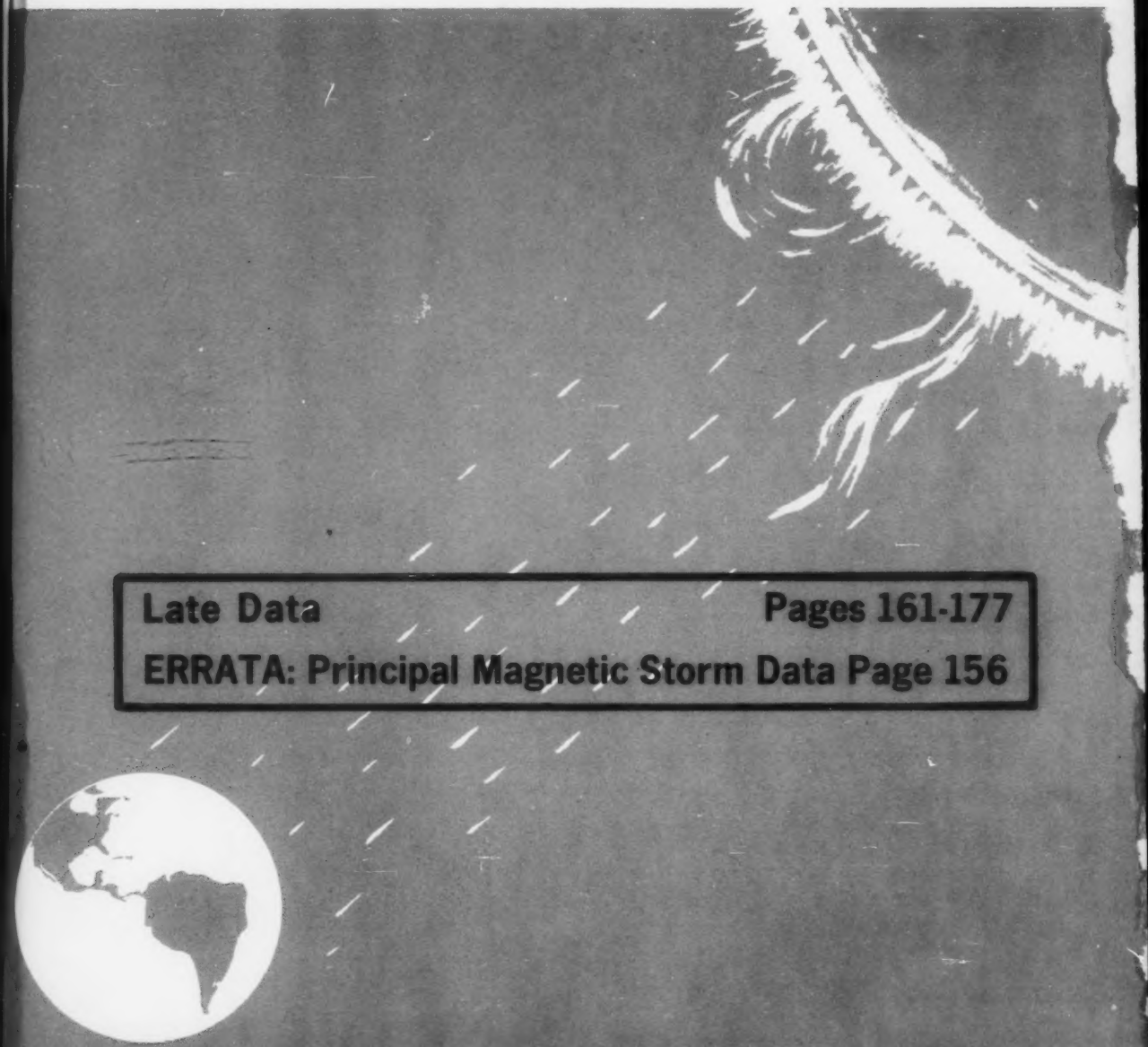
JULY 1982 NUMBER 455 – Part I

P-A STACKS
SEP 9 - 1982

Solar-Geophysical Data prompt reports

Data for June 1982, May 1982 & Late Data
Explanation of Data Reports Issued as Number 450 (Supplement) February 1982



Late Data **Pages 161-177**

ERRATA: Principal Magnetic Storm Data Page 156

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA AND INFORMATION SERVICE / BOULDER, COLORADO

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Solar - Geophysical Data

NO. 455 JULY 1982

Part I (Prompt Reports)

DATA FOR
JUNE 1982
MAY 1982

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To standardize referencing these reports in the open literature, the following format is recommended:
Solar-Geophysical Data, 450 Part I (or Part II), pages, February 1982, U.S. Department of Commerce (Boulder, Colorado, U.S.A. 80303).

SOLAR-GEOPHYSICAL DATA

No. 455

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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83 5 228885 2 013 1 SN 3076

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A.1	Sunspot Drawings	444A 52	445A 54	446A 40	447A 54	448A 52	449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	
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A.5a	Calcium Plage (Mt. Wilson or Big Bear) and Sunspot Regions	444A112	445A116	447A163	447A114	448A114	449A110	450A104	451A120	452A106	453A102	454A104	455A126	
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A.8g	Daily Values of Adjusted Solar Flux (AFGL)	443A 9	444A 11	445A 11	----	447A 11	448A 11	449A 11	450A 11	451A 11	452A 11	453A 11	454A 9	455A 11
A.10a	169 MHz - Interferometric Observations (Nancay)	443A 23	444A 27	445A 27	446A 20	447A 28	448A 25	449A 25	450A 23	452A162	452A 28	455A162	454A 21	455A 30
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A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	443A 25	444A 29	445A 29	446A 22	447A 31	448A 27	449A 27	450A 25	451A 32	452A 30	453A 25	454A 23	455A 32
A.10f	3 cm East-West Solar Scans (Toyokawa)	443A 24	444A 28	445A 30	----	447A 29	448A 26	449A 26	450A 24	451A 31	452A 29	453A 24	454A 22	455A 31
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A.17c	Inferred IP Magnetic Field	443A 36	444A 44	445A 46	446A 32	447A 44	448A 42	449A 36	450A 32	451A 48	452A 40	453A 30	454A 30	455A 54
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C.1d	Flare Patrol Observations	443A 22	444A 26	445A 26	446A 19	448A358	----	449A 24	450A 22	451A 30	452A 27	453A 23	454A 20	455A 29
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C.1e	Flare Indices (by day) 1980													
C.1f	Flare Indices (by Region) 1980													
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C.4d	Solar Radio Spectral Obs. (Culgoora)	444A127	445A136	446A108	447A130	448A173	449A132	450A122	451A140	452A124	455A163	455A170	455A143	
C.4e	Solar Radio Spectral Obs. (Weissenau)	445A136	445A136	446A108	447A130	448A173	449A132	450A122	451A140	452A124	453A118	454A121	455A143	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	444A127	445A136	446A108	447A130	448A134	449A132	450A122	451A140	452A124	453A118	454A121	455A143	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)	444A127	445A136	446A108	447A130	448A134	449A132	450A122						
C.4i	Solar Radio Spectral Obs. (Bleien)	445A127	445A136	----	----	----	----	----	451A140	452A124	454A145			
C.4j	Solar Radio Spectral Obs. (Manila)													
C.4k	Solar Radio Spectral Obs. (Learmonth)	444A127	445A136	446A108	447A130	448A134	449A132	450A122	451A140	452A124	453A118	454A121	455A143	
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D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, as, Cp	444A144	445A160	446A135	447A152	448A150	449A159	450A138	451A151	452A152	453A136	454A134	455A153	
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D.1ca	as graph 1868 - present													
D.1d	Principal Magnetic Storms	444A147	445A163	447A180	448A164	449A186	449A162	450A141	451A159	452A155	453A141	454A139	455A156	
D.1e	Reduced Magnetograms													
D.1f	Sudden Commencement and Solar Flare Effects	445A180	445A164	446A138	447A155	448A153	449A163	450A142	451A168	452A157	453A142			
D.1g	Equatorial Indices Dst	445A183	446A144	447A179	448A153	449A185	450A153	451A175	452A165	453A148	453A140	454A138		
D.1h	Geomagnetic Substorm Log (Boulder)	443A 40	444A 48	445A 4	446A 35	447A 47	448A 45	449A 39	450A 35	451A 52	452A 44	453A 34	454A 34	455A 58
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F.1e	Cosmic Ray Neutron Counts (Alert)	447A176	447A176	447A177	447A151	449A180	450A149	450A134	451A151	452A151	453A135	455A177	455A152	
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Notes:

"444A 52" listed under 1981 Jun means that the sunspot drawings for Jun 1981 were contained in Solar-Geophysical Data Number 444 - Part I, beginning on page 52.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

SGD 455 Part I (Prompt)

JUNE 1982 DATA

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ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JUNE 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of obser-vation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location Lat-Long	No. of Flares Total	M	X		Date	Location Lat-Long	Desc*	
152	01	31	123	133	026	S21W64	3	1	0		01	S21W64	Q	SOLNIL
						S15W32	0	0	0			S15W32	Q	MAGQUIET
						S03W19	0	0	0			S03W19	E	
						S15W08	6	0	0			S15W08	Q	
						S04E31	3	0	0			S04E31	Q	
						N19E50	0	0	0			N19E50	Q	
						N09E73	7	0	0			N09E73	Q	
						N14E76	0	0	0			N14E76	Q	
153	02	01	108	130	015	S16W46	0	0	0		02	S16W46	Q	SOLQUIET
						S05W32	0	0	0			S05W32	E	MAGQUIET
						S16W20	1	0	0			S16W20	Q	
						N18E37	0	0	0			N18E37	Q	
						N08E59	7	0	0			N08E59	E	
						N14E63	0	0	0			N14E63	Q	
						N19E67	1	0	0			N19E67	Q	
						S09E88	0	0	0			S09E88	Q	
154	03	02	137	131	015	S15W60	0	0	0	Presto Tenflare	03	S15W60	Q	SOLQUIET
						S04W46	0	0	0	240 Flux Units		S04W46	E	MAGQUIET
						S15W34	1	0	0	02/1525Z Duration		S15W34	E	
						S08E12	0	0	0	9 Minutes. Soflare		S08E12	Q	
						N18E21	4	0	0	M9/1B S08E83		N18E21	Q	
						N10E45	3	0	0	02/1508Z Duration		N10E45	E	
						N14E49	0	0	0	34 Minutes.		N14E49	Q	
						N21E54	2	0	0			N21E54	Q	
						S08E73	9	1	0			S08E73	E	
155	04	03	141	138	013	S04W59	0	0	0	Presto Strong Type	04	S04W59	E	SOLALERT 04/XX
						S03W05	0	0	0	IV Observed Behind		S03W05	Q	MAGALERT
						S08W03	0	0	0	NW Limb Start 0401Z.		S08W03	Q	
						N18E08	3	0	0	Tenflare 2700 Flux		N18E08	Q	
						N10E32	0	0	0	Units 03/1141Z		N10E32	E	
						N14E36	0	0	0	Duration 20 Minutes.		N14E36	Q	
						N20E38	1	0	0	Soflare X8/2B		N20E38	Q	
						S08E61	20	3	1	S09E72 03/1140Z Duration 15 Minutes.		S08E61	A	
156	05	04	177	152	008	S03W72	2	0	0	Presto Tenflare	05	S03W72	E	SOLALERT
						N13W27	0	0	0	100 Flux Units		N13W27	Q	MAGALERT 06/07
						S02W20	0	0	0	03/0830Z Duration		S02W20	Q	
						S07W16	0	0	0	15 Minutes. Soflare		S07W16	Q	
						N20W07	0	0	0	X2/2B S10E54 04/		N20W07	E	
						N10E18	0	0	0	1415Z Duration 20		N10E18	Q	
						N14E21	0	0	0	Minutes. Soflare		N14E21	Q	
						N21E26	2	0	0	X1/1B S10E54 04/		N21E26	E	
						S07E47	15	8	3	0501Z Duration 25 Minutes. Soflare X5/2B S10E54 04/ 1313Z Duration 25 Minutes. Soflare M2/2B S10E50 04/ 1914Z Duration 21 Minutes.		S07E47	A	
157	06	05	171	152	010	S05W83	0	0	0	Presto Soflare	06	S05W83	Q	MAJOR FLARE ALERT 05/11
						S08W31	0	0	0	X1/SB S07E45 05/		S08W31	Q	MAGALERT 06/07
						S09W02	0	0	0	0612Z Duration 16		S09W02	Q	
						N10E05	0	0	0	Minutes. Tenflare		N10E05	E	
						N14E09	0	0	0	310 Flux Units 05/		N14E09	Q	
						N22E12	0	0	0	0616Z Duration 40		N22E12	E	
						S08E34	18	5	1	Minutes. Tenflare 150 Flux Units 05/ 0613Z Duration 10 minutes.		S08W34	A	
158	07	06	190	152	020	S08W15	0	0	0	Presto Soflare	07	S08W15	Q	SOLALERT 07/09
						N10W07	0	0	0	X12/3B S11E26 06/		N10W07	Q	MAGALERT 07/09
						N14W04	0	0	0	1630Z Duration 25		N14W04	Q	
						N21W02	1	0	0	minutes. Tenflare		N21W02	Q	
						S09E21	15	3	1	3300 Flux Units 06/		S09E21	A	
						S08W46	0	0	0	1631Z Duration 10		S08W46	Q	
						N03E73	0	0	0	minutes. Tenflare 1100 Flux Units 06/ 1803Z Duration 12 minutes. Tenflare 1800 Flux Units 06/ 1815Z Duration 10 Minutes. Tenflare 1000 Flux Units 06/ 1825Z Duration 11 Minutes. Tenflare 640 Flux Units 06/ 1836Z Duration 72 Minutes.		N03E73	Q	
159	08	07	195	151	023	S08W30	0	0	0	Presto Tenflare	08	S08W30	Q	SOLALERT 08/XX
						N10W20	0	0	0	230 Flux Units 07/		N10W20	E	MAGALERT 08/09
						N14W16	0	0	0	0826Z Duration 15		N14W16	Q	
						N21W15	0	0	0	Minutes.		N21W15	Q	
						S09E08	12	3	0			S09E08	A	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JUNE 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	No. of Flares: Total	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
						N10E54	0	0	0			N10E54	Q	
						S18E60	0	0	0			S18E60	Q	
						N03E61	0	0	0			N03E61	Q	
160	09	08	195	162	008	S07W42	0	0	0		09	S07W42	Q	SOLALERT 09/10
						N10W32	0	0	0			N10W32	Q	MAGALERT MINOR 09
						N14W30	0	0	0			N14W30	Q	
						N22W29	0	0	0			N22W29	Q	
						S07W06	6	4	0			S07W06	A	
						N11E41	0	0	0			N11E41	Q	
						S17E47	0	0	0			S17E47	E	
						N04E48	0	0	0			N04E48	Q	
						S03E66	0	0	0			S03E66	Q	
						N19E80	2	0	0			N19E80	Q	
161	10	09	230	172	018	S09W56	0	0	0	Presto Tenflare 256	10	S09W56	Q	SOLALERT 10/XX
						N14W43	0	0	0	Flux Units 09/1125Z		N14W43	Q	MAGNIL
						N21W43	0	0	0	Duration 19 Minutes		N21W43	Q	
						S09W20	10	2	0			S09W20	A	
						S11E14	0	0	0			S11E14	Q	
						N09E27	0	0	0			N09E27	Q	
						S18E33	2	0	0			S18E33	E	
						N02E34	0	0	0			N02E34	Q	
						S03E52	1	0	0			S03E52	Q	
						N19E64	1	0	0			N19E64	E	
						S14E74	3	0	0			S14E74	Q	
						N08E83	0	0	0			N08E83	Q	
162	11	10	210	188	035	S08W72	0	0	0	Presto Soflare	11	S08W72	Q	SOLALERT 11/XX
						N21W56	1	0	0	M5/2B S08W22 10/		N21W56	Q	MAGALERT MINOR 11
						N15W55	0	0	0	0053Z Duration 15		N15W55	Q	
						S08W34	10	4	0	Minutes. Magstorm		S08W34	A	
						N08E12	0	0	0	Begins 10/0156Z.		N08E12	Q	
						S18E20	3	0	0	Tenflare 310 Flux		S18E20	E	
						N02E21	0	0	0	Units 10/1940Z		N02E21	Q	
						S03E39	0	0	0	Duration 28 Minutes.		S03E39	Q	
						N18E53	1	0	0	Proton Event 09/		N18E53	E	
						S14E60	4	0	0	0040Z 11 Protons		S14E60	E	
						N07E71	0	0	0	start, Maximum 31 Protons cm^2/sec/ster at greater than 10 MEV.		N07E71	E	
163	12	11	247	221	022	S10W82	0	0	0	Presto Tenflare	12	S10W82	Q	SOLALERT 12/15
						N15W69	0	0	0	230 Flux Units		N15W69	Q	MAGALERT MINOR
						N21W68	0	0	0	11/0224Z DURATION		N21W68	Q	
						S08W47	11	2	0	10 Minutes.		S08W47	A	
						S26W12	0	0	0			S26W12	Q	
						N13W08	0	0	0			N13W08	A	
						S18E07	1	0	0			S18E07	E	
						N02E08	0	0	0			N02E08	Q	
						S03E25	0	0	0			S03E25	Q	
						N18E39	0	0	0			N18E39	E	
						S13E46	0	0	0			S13E46	E	
						N07E59	0	0	0			N07E59	E	
						N13E82	0	0	0			N13E82	Q	
164	13	12	209	256	028	N15W82	0	0	0	Presto Tenflare	13	N15W82	Q	MAJOR FLARE ALERT 17312 13/15
						S09W61	10	0	0	200 Flux Units		S09W61	A	MAGALERT 13/15
						S26W25	0	0	0	12/0245Z Duration		S26W25	Q	
						N12W23	0	0	0	10 Minutes. Soflare		N12W23	Q	
						S18W07	1	0	0	X3/1B N10E83		S18W07	E	
						N02W06	0	0	0	12/0509Z Duration		N02W06	Q	
						S03E12	0	0	0	47 Minutes.		S03E12	E	
						N19E26	1	0	0			N19E26	E	
						S13E32	2	0	0			S13E32	E	
						N08E46	1	0	0			N08E46	E	
						N12E73	17	9	1			N12E73	A	
165	14	13	223	233	037	S10W75	12	2	0	Presto Soflare	14	S10W75	E	PROTON FLARE ALERT 16213 14/18
						N12W36	0	0	0	X3/1B N12E75		N12W36	Q	MAGALERT 14/16
						S18W21	8	0	0	13/0950Z Duration		S18W21	E	
						N02W19	0	0	0	54 Minutes, Suspect-		N02W19	Q	
						S03W01	0	0	0	ed Proton Flare.		S03W01	Q	
						N19E13	2	0	0	Tenflare 750 Flux		N19E13	E	
						S13E20	1	0	0	Units 13/0944Z		S13E20	E	
						N08E33	4	0	0	Duration 53 Minutes		N08E33	E	
						S23E33	0	0	0	Tenflare 270 Flux		S23E33	Q	
						N13E62	12	2	1	Units 13/2320Z Duration 15 Minutes		N13E62	A	
166	15	14	227	233	027	S10W87	14	5	1	Presto Tenflare	15	S10W87	A	SOLALERT 15/XX
						S17W33	2	0	0	1650 Flux Units		S17W33	E	MAGALERT MINOR 15/17
						N02W32	0	0	0	14/0616Z Duration		N02W32	Q	
						S03W14	0	0	0	60 Minutes. Soflare		S03W14	Q	
						N19W00	2	0	0	M1/2B S13W71		N19W00	Q	
						S12E07	2	0	0	14/0009Z Duration		S12E07	Q	
						S23E19	1	0	0	68 Minutes. Soflare		S23E19	Q	
						N09E20	4	0	0	X1/2B S12W77		N09E20	E	
						N13E47	12	2	0	14/0623Z Duration		N13E47	A	

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SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of obser-vation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location Lat-Long	No. of Flares Total	M	X		Date	Location Lat-Long	Desc*	
						S17E76	0	0	0	42 Minutes.Soflare X1/1B N10E65 14/0625Z Duration 42 Minutes. Tenflare 1000 Flux Units 14/0621Z Duration 51 Minutes.		S17E76	Q	
167	16	15	196	229	025	N03W45	0	0	0	Presto Soflare	16	N03W45	Q	SOLALERT 16/XX
						S18W45	1	0	0	X2/1B N10E46		S18W45	E	MAGALERT 16/18
						S03W27	0	0	0	15/0226Z Duration		S03W27	Q	
						N19W13	3	0	0	10 Minutes.Tenflare		N19W13	Q	
						S13W06	0	0	0	810 Flux Units		S13W06	Q	
						S22E05	0	0	0	15/0031Z Duration		S22E05	Q	
						N08E07	3	0	0	10 Minutes.Soflare		N08E07	Q	
						N13E32	15	3	2	X3/3B N13E47		N13E32	P	
						S18E63	5	1	1	15/1016Z Duration 28 Minutes.Soflare X1/2B S22E66 15/1507Z Duration 13 Minutes.Tenflare 460 Flux Units 15/1510Z Duration 10 Minutes. Tenflare 230 Flux Units 15/0805Z Duration 36 Minutes.		S18E63	E	
168	17	16	215	209	012	N03W58	0	0	0	Presto Tenflare	17	N03W58	Q	SOLALERT 17/XX
						S17W58	0	0	0	310 Flux Units		S17W58	Q	MAGALERT MINOR 18
						S03W40	0	0	0	16/0210Z Duration		S03W40	Q	
						N19W26	0	0	0	10 Minutes.Soflare		N19W26	Q	
						S13W19	0	0	0	X2/2B N11E35		S13W19	Q	
						N08W07	0	0	0	16/0208Z Duration		N08W07	Q	
						S24W06	0	0	0	22 Minutes.		S24W06	Q	
						N13E21	13	1	1			N13E21	P	
						S19E48	6	0	0			S19E48	E	
						N16E62	0	0	0			N16E62	Q	
169	18	17	213	202	010	N03W72	0	0	0	Presto Tenflare	18	N03W72	Q	SOLALERT 18
						S18W71	0	0	0	620 Flux Units		S18W71	Q	MAGALERT MINOR 18
						S18W59	0	0	0	17/1048Z Duration		S18W59	Q	
						S03W53	0	0	0	36 Minutes. Soflare		S03W53	Q	
						N19W41	0	0	0	M5/2B N10E22		N19W41	Q	
						S15W33	0	0	0	17/1047Z Duration		S15W33	Q	
						N07W21	2	0	0	15 Minutes.		N07W21	Q	
						N12E08	8	3	0			N12E08	A	
						S20E35	2	0	0			S20E35	E	
						N15E44	0	0	0			N15E44	Q	
						N16E71	0	0	0			N16E71	Q	
170	19	18	211	201	009	S18W85	5	0	0	Presto Tenflare	19	S18W85	Q	SOLALERT 19/21
						N03W84	0	0	0	280 Flux Units		N03W84	Q	MAGNIL
						S18W73	4	0	0	18/1513Z DURATION		S18W73	Q	
						N08W34	0	0	0	7 Minutes.		N08W34	Q	
						N16W06	12	1	0			N16W06	A	
						S19E24	4	0	0			S19E24	Q	
						N16E31	2	0	0			N16E31	Q	
						N15E63	3	0	0			N15E63	Q	
171	20	19	188	201	015	S19W85	0	0	0	Presto Tenflare	20	S19W85	Q	SOLALERT 20/22
						N02W52	0	0	0	130 Flux Units		N02W52	Q	MAGQUIET
						N08W47	0	0	0	19/0046Z Duration		N08W47	Q	
						N13W19	13	1	0	12 Minutes. Soflare		N13W19	A	
						S19E09	0	0	0	M2/2B N14W25		S19E09	Q	
						N16E17	7	0	0	19/1947Z Duration		N16E17	Q	
						N15E50	5	0	0	20 Minutes.Tenflare 430 Flux Units 19/0820Z Duration 13 Minutes.		N15E50	Q	
172	21	20	198	201	021	N09W61	0	0	0	Presto Tenflare	21	N09W61	Q	SOLALERT 21/22
						N15W30	9	5	0	210 Flux Units		N15W30	A	MAGQUIET
						S19W02	0	0	0	20/0020Z Duration		S19W02	Q	
						N16E02	14	4	0	10 Minutes. Tenflare		N16E02	Q	
						N23E05	0	0	0	1200 Flux Units		N23E05	Q	
						N15E39	2	0	0	20/0147Z Duration 10 Minutes.Soflare M5/2B N13W17 20/0146Z Duration 24 Minutes.Tenflare 230 Flux Units 20/0114Z DURATION 10 Minutes.Tenflare 540 Flux Units 20/0403Z Duration 1 minute.		N15E39	Q	
173	22	21	244	204	009	N08W76	0	0	0	Presto Soflare	22	N08W76	Q	SOLALERT 22/24
						S05W75	0	0	0	M3/2B N13W00		S05W75	Q	MAGALERT 22/24
						N13W47	5	0	0	21/0058Z Duration		N13W47	A	

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Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	No. of Flares: Total	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
						S19W16	2	0	0	104 Minutes.		S19W16	Q	
						N16W11	13	7	1	Soflare X2/1B		N16W11	E	
						N24W08	0	0	0	N15W12 21/2306Z		N24W08	Q	
						N16E26	6	0	0	Duration 62 Minutes.		N16E26	Q	
174	23	22	196	206	015	N07W90	0	0	0	Presto Tenflare	23	N07W90	Q	SOLALERT 23/24
						N13W62	2	0	0	200 Flux Units		N13W62	A	MAGALERT MINOR 23/25
						S18W30	2	0	0	21/2301Z Duration		S18W30	Q	
						N16W24	7	4	0	8 Minutes.		N16W24	A	
						S01W13	0	0	0			S01W13	Q	
						N16E13	4	0	0			N16E13	E	
175	24	23	176	181	022	N13W77	6	0	0		24	N13W77	A	SOLALERT 24/25
						S18W44	0	0	0			S18W44	Q	MAGALERT MINOR 24/26
						N16W38	12	7	0			N16W38	A	
						N24W36	0	0	0			N24W36	Q	
						S02W27	0	0	0			S02W27	E	
						S22W26	0	0	0			S22W26	Q	
						N15E01	2	0	0			N15E01	E	
						N07E62	0	0	0			N07E62	Q	
176	25	24	194	163	017	N13W90	3	0	0		25	N13W90	E	SOLALERT 25/26
						S18W58	0	0	0			S18W58	Q	MAGALERT MINOR 25/26
						N15W52	11	3	0			N15W52	A	
						N23W49	1	0	0			N23W49	Q	
						S02W41	1	0	0			S02W41	Q	
						S23W39	0	0	0			S23W39	Q	
						N13W28	0	0	0			N13W28	Q	
						N16W14	3	0	0			N16W14	E	
						N07E48	1	0	0			N07E48	Q	
177	26	25	169	156	016	S19W71	0	0	0	Presto Soflare	26	S19W71	Q	SOLALERT 26/27
						N15W65	14	2	0	M2/2B N17W56		N15W65	A	MAGALERT MINOR 26/XX
						N23W62	1	0	0	24/1939Z Duration		N23W62	Q	
						S02W55	2	0	0	9 Minutes. Soflare		S02W55	Q	
						S23W52	1	0	0	M7/1B N17W61		S23W52	Q	
						N13W41	0	0	0	25/2129Z Duration		N13W41	Q	
						N16W27	2	0	0	23 Minutes. Tenflare		N16W27	E	
						N07E36	0	0	0	330 Flux Units		N07E36	Q	
						S14E36	0	0	0	25/2131Z Duration 10 Minutes.		S14E36	Q	
178	27	26	129	138	012	S19W84	0	0	0	Presto Soflare	27	S19W84	Q	SOLALERT 27/XX
						N19W79	6	2	2	X1/2B N16W64		N19W79	A	MAGALERT MINOR 27/XX
						S07W69	0	0	0	26/0041Z Duration		S07W69	Q	
						S23W64	0	0	0	18 Minutes. Tenflare		S23W64	Q	
						N13W56	0	0	0	202 Flux Units		N13W56	Q	
						N15W42	1	0	0	26/0044Z Duration		N15W42	Q	
						S15E24	0	0	0	20 Minutes. Soflare		S15E24	Q	
						N07E23	0	0	0	X2/2B N15W73 26/1917Z Duration 18 Minutes.		N07E23	Q	
179	28	27	073	123	026	N15W92	1	1	0		28	N15W92	E	SOLALERT 27/XX
						S02W83	0	0	0			S02W83	Q	MAGALERT MINOR 27/XX
						N16W55	0	0	0			N16W55	Q	
						N06E09	0	0	0			N06E09	Q	
						S15E11	0	0	0			S15E11	Q	
180	29	28	056	119	026	N16W68	1	0	0		29	N16W68	E	SOLNIL
						S12W03	0	0	0			S12W03	Q	MAGNIL
						S13E26	0	0	0			S13E26	Q	
						N07E66	0	0	0			N07E66	Q	
181	30	29	067	108	013	N15W83	1	0	0		29	N15W83	Q	SOLQUIET
						S14W16	0	0	0			S14W16	Q	MAGQUIET
						S13E11	0	0	0			S13E11	Q	
						N07E54	0	0	0			N07E54	Q	
						S09E77	0	0	0			S09E77	Q	
182	01	30	073	105	029	N08W33	2	0	0		30	N08W33	Q	SOLQUIET
						S14W31	0	0	0			S14W31	Q	MAGQUIET
						S13W00	0	0	0			S13W00	Q	
						N07E39	1	0	0			N07E39	Q	
						S08E63	0	0	0			S08E63	Q	

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PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

02 JUNE 1982 BOULDER 02/1559Z SOFLARE M9/1B S11E82 02/1525Z DURATION IN PROGRESS
02 JUNE 1982 BOULDER 02/1559Z TENFLARE 240 FLUX UNITS 02/1545Z DURATION IN PROGRESS
03 JUNE 1982 SYDNEY 03/0440Z STRONG TYPE IV OBSERVED BEHIND NW LIMB START 0401Z, IN PROGRESS
03 JUNE 1982 SYDNEY 03/0330Z CULGOORA WEAK TYPE II AND VERY WEAK TYPE IV EVENT BEHIND NW LIMB START 0235Z END 0242Z
03 JUNE 1982 MOSCOW 03/1156Z TENFLARE 800 FLUX UNITS 03/1145Z IN PROGRESS
03 JUNE 1982 BOULDER 03/1306Z SOFLARE X8/2B S09E72 03/1140Z DURATION 15 MINUTES
03 JUNE 1982 BOULDER 03/1306Z TENFLARE 2700 FLUX UNITS 03/1141Z DURATION 20 MINUTES
04 JUNE 1982 TOYOKAWA 04/0110Z TENFLARE 100 FLUX UNITS 03/0830Z
04 JUNE 1982 BOULDER 04/1515Z SOFLARE X2/2B S10E54 04/1415Z DURATION 20 MINUTES
04 JUNE 1982 BOULDER 04/1515Z SOFLARE X1/1B S10E54 04/0501Z DURATION 25 MINUTES
04 JUNE 1982 BOULDER 04/1515Z SOFLARE X5/2B S10E54 04/1313Z DURATION 25 MINUTES
04 JUNE 1982 BOULDER 04/1932Z SOFLARE M2/2B S10E50 04/1914Z DURATION 21 MINUTES
05 JUNE 1982 BOULDER 05/0645Z SOFLARE X1/SB S07E49 05/0612Z DURATION 16 MINUTES
05 JUNE 1982 BOULDER 05/0645Z TENFLARE 310 FLUX UNITS 05/0616Z DURATION 40 MINUTES
06 JUNE 1982 TOYOKAWA 06/0030Z TENFLARE 150 FLUX UNITS 05/0613Z DURATION 10 MINUTES
06 JUNE 1982 BOULDER 06/1700Z SOFLARE X12/3B S11E26 06/1630Z DURATION 25 MINUTES
06 JUNE 1982 BOULDER 06/1700Z TENFLARE 3300 FLUX UNITS 06/1631Z DURATION 10 MINUTES
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 1100 FLUX UNITS 06/1803Z DURATION 12 MINUTES
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 1000 FLUX UNITS 06/1825Z DURATION 11 MINUTES
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 1800 FLUX UNITS 06/1815Z DURATION 10 MINUTES
07 JUNE 1982 BOULDER 07/0130Z TENFLARE 640 FLUX UNITS 06/1836Z DURATION 72 MINUTES
07 JUNE 1982 TOYOKAWA 07/0850Z TENFLARE 240 FLUX UNITS 07/0825Z DURATION 7 MINUTES
07 JUNE 1982 BOULDER 07/1352Z TENFLARE 230 FLUX UNITS 07/0826Z DURATION 15 MINUTES
09 JUNE 1982 BOULDER 09/1415Z TENFLARE 256 FLUX UNITS 09/1125Z DURATION 19 MINUTES
09 JUNE 1982 BOULDER 09/0631Z PROTON EVENT 09/0040Z 11 PROTONS START WITH 31 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV AT 09/0510Z.
10 JUNE 1982 BOULDER 10/0112Z SOFLARE M5/2B S08W22 10/0053Z DURATION 15 MINUTES
10 JUNE 1982 SYDNEY 10/0350Z MAGSTORM BEGINS 10/0156Z
10 JUNE 1982 BOULDER 10/2130Z TENFLARE 310 FLUX UNITS 10/1940Z DURATION 28 MINUTES
11 JUNE 1982 TOYOKAWA 11/0303Z TENFLARE 230 FLUX UNITS 11/0224Z DURATION 10 MINUTES
12 JUNE 1982 TOYOAKWA 12/0300Z TENFLARE 200 FLUX UNITS 12/0245Z DURATION 10 MINUTES
12 JUNE 1982 BOULDER 12/1435Z SOFLARE M3/1B N10E83 12/0509Z DURATION 47 MINUTES
13 JUNE 1982 BOULDER 13/1030Z SOFLARE X2/1B N12E75 13/0950Z DURATION 54 MINUTES
13 JUNE 1982 BOULDER 13/1030Z TENFLARE 750 FLUX UNITS 13/0944Z DURATION 53 MINUTES
14 JUNE 1982 TOYOKAWA 14/0015Z TENFLARE 270 FLUX UNITS 13/2320Z DURATION 15 MINUTES
14 JUNE 1982 TOYOKAWA 14/0727Z TENFLARE 1650 FLUX UNITS 14/0616Z DURATION 60 MINUTES
14 JUNE 1982 BOULDER 14/0300Z SOFLARE M1/2B S13W71 14/0009Z DURATION 68 MINUTES
14 JUNE 1982 MOSCOW 14/0620Z SOFLARE 2B N13E57 14/0620Z
14 JUNE 1982 MOSCOW 14/0620Z SOFLARE 2B S10W79 14?0623Z
14 JUNE 1982 BOULDER 14/0730Z SOFLARE X1/2B S12W77 14/0623Z DURATION 42 MINUTES
14 JUNE 1982 BOULDER 14/0730Z SOFLARE X1/1B N10E65 14/0625Z DURATION 42 MINUTES
14 JUNE 1982 BOULDER 14/0730Z TENFLARE 1000 FLUX UNITS 14/0621Z DURATION 51 MINUTES
15 JUNE 1982 TOYOKAWA 15/0117Z TENFLARE 1260 FLUX UNITS 15/0031Z DURATION 15 MINUTES
15 JUNE 1982 BOULDER 15/0251Z TENFLARE 810 FLUX UNITS 15/0031Z DURATION 10 MINUTES
15 JUNE 1982 BOULDER 15/0251Z SOFLARE X2/1B N10E46 15/0226Z DURATION 10 MINUTES
15 JUNE 1982 SYDNEY 15/0320Z SOFLARE CULGOORA 2B START 0255Z REGION 3776 N10E46 STRONG LONG LASTING SWF
15 JUNE 1982 BOULDER 15/1300Z SOFLARE X3/2B N13E47 15/1016Z DURATION 28 MINUTES
15 JUNE 1982 BOULDER 15/1545Z SOFLARE X1/2B S22E66 15/1507Z DURATION 13 MINUTES
15 JUNE 1982 TOYOKAWA 15/0938Z TENFLARE 230 FLUX UNITS 15/0805Z DURATION 36 MINUTES
16 JUNE 1982 TOYOKAWA 16/0233Z TENFLARE 310 FLUX UNITS 16/0210Z DURATION 10 MINUTES
16 JUNE 1982 BOULDER 16/0245Z SOFLARE X2/2B N11E35 16/0208Z DURATION 22 MINUTES
16 JUNE 1982 SYDNEY 16/0225Z SOFLARE CULGOORA 2B 600 MIL START 0209Z MAX 0214Z IN RGN 3776 N11E35 PARALLEL RIBBONS SOUTH OF MAIN SPOT SWF AND MICROWAVE 2695 MHZ 120 FLUX UNITS LEARMONTH
17 JUNE 1982 BOULDER 17/1150Z TENFLARE 620 FLUX UNITS 17/1048Z DURATION 36 MINUTES
17 JUNE 1982 BOULDER 17/1150Z SOFLARE M5/2B N10E22 17/1047Z DURATION 15 MINUTES
18 JUNE 1982 BOULDER 18/1615Z TENFLARE 280 FLUX UNITS 18/1513Z DURATION 7 MINUTES
19 JUNE 1982 BOULDER 19/2020Z SOFLARE M2/2B N14W25 19/1947Z DURATION 20 MINUTES
20 JUNE 1982 TOYOKAWA 20/0024Z TENFLARE 430 FLUX UNITS 19/0820Z DURATION 13 MINUTES
19 JUNE 1982 TOYOKAWA 19/0115Z TENFLARE 130 FLUX UNITS 19/0046Z DURATION 12 MINUTES
20 JUNE 1982 TOYOKAWA 20/0109Z TENFLARE 210 FLUX UNITS 20/0020Z DURATION 10 MINUTES
20 JUNE 1982 BOULDER 20/0313Z SOFLARE M5/2B N13W17 20/0146Z DURATION 24 MINUTES
20 JUNE 1982 BOULDER 20/0313Z TENFLARE 230 FLUX UNITS 20/0114Z DURATION 10 MINUTES
20 JUNE 1982 TOYOKAWA 20/0232Z TENFLARE 100 FLUX UNITS 20/0113Z DURATION 6 MINUTES
20 JUNE 1982 TOYOKAWA 20.0235Z TENFLARE 1200 FLUX UNITS 20/0147Z DURATION 10 MINUTES
20 JUNE 1982 BOULDER 20/0608Z TENFLARE 540 FLUX UNITS 20/0403Z DURATION 1 MINUTE
21 JUNE 1982 BOULDER 21/1300Z SOFLARE M3/2B N13W00 21/0058Z DURATION 104 MINUTES
21 JUNE 1982 BOULDER 21/2318Z SOFLARE X2/1B N15W12 21/2232Z DURATION 15 MINUTES
22 JUNE 1982 TOYOKAWA 22/0030Z TENFLARE 200 FLUX UNITS 21/2301Z DURATION 8 MINUTES
25 JUNE 1982 BOULDER 25/2023Z SOFLARE N17W56 25/1939Z DURATION 7 MINUTES
25 JUNE 1982 BOULDER 25/2144Z TENFLARE 250 FLUX UNITS 25/2134Z DURATION 10 MINUTES
26 JUNE 1982 TOYOKAWA 26/0010Z TENFLARE 330 FLUX UNITS 25/2131Z DURATION 10 MINUTES
26 JUNE 1982 TOYOKAWA 26/0130Z TENFLARE 200 FLUX UNITS 26/0044Z DURATION 20 MINUTES
26 JUNE 1982 BOULDER 26/0130Z SOFLARE X1/2B N16W64 26/0041Z DURATION 18 MINUTES
26 JUNE 1982 BOULDER 26/0130Z TENFLARE 170 FLUX UNITS 26/0046Z DURATION 12 MINUTES
26 JUNE 1982 BOULDER 26/2015Z SOFLARE X2/2B N17W74 26/1908Z DURATION 7 MINUTES
26 JUNE 1982 BOULDER 26/2015Z TENFLARE 500 FLUX UNITS 26/1910Z DURATION 18 MINUTES

RELATIVE SUNSPOT NUMBERS

INTERNATIONAL, R_I

	1981 FINAL						1982 PROVISIONAL					
DAY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	149	121	205	216	165	193	92	258	168	145	63	70
2	140	105	183	206	222	197	94	241	174	115	57	83
3	140	112	160	219	218	212	112	232	175	151	46	94
4	112	109	170	189	221	212	109	221	177	137	58	104
5	112	113	195	195	233	219	112	219	163	112	63	111
6	85	102	220	169	199	234	86	230	165	117	64	108
7	66	107	205	171	192	244	94	226	146	130	69	115
8	62	115	208	185	184	249	97	232	140	131	89	127
9	65	121	190	177	134	258	98	211	116	132	47	142
10	99	138	196	144	147	253	85	181	122	138	53	147
11	130	136	164	131	146	263	46	158	119	152	58	138
12	139	140	138	123	160	240	52	156	135	142	75	144
13	153	134	132	171	158	185	51	162	155	148	78	139
14	145	140	148	187	178	159	58	142	153	136	58	137
15	150	153	129	212	139	113	81	134	140	127	52	125
16	161	134	138	223	126	66	76	111	156	122	69	128
17	171	125	129	219	103	80	111	120	180	108	76	136
18	161	148	145	210	108	79	139	103	168	91	89	134
19	151	175	156	189	90	74	143	107	167	87	110	134
20	145	188	137	183	82	57	134	119	160	93	112	139
21	122	222	175	145	82	65	134	120	153	91	98	143
22	129	220	172	145	73	75	121	100	146	109	121	146
23	162	200	137	118	65	86	93	97	144	138	107	116
24	196	178	135	109	59	68	70	120	122	145	110	112
25	213	189	142	101	60	62	82	128	152	149	88	92
26	206	215	153	92	60	100	119	136	147	150	117	94
27	218	222	181	75	77	104	125	154	182	126	130	49
28	208	214	195	92	130	136	168	163	179	90	108	36
29	159	194	191	131	148	132	216		169	85	102	32
30	156	233	190	152	165	112	211		162	75	66	38
31	152	216		156		126	237		132		89	
MEAN	143.8	158.7	167.3	162.4	137.5	150.1	111.2	163.6	153.8	122.5	81.4	110.4

1981 YEARLY MEAN = 140.4

* ZURICH R_Z SUNSPOT NUMBER REPLACED BY INTERNATIONAL R_I SUNSPOT NUMBER BEGINNING WITH JANUARY 1981 DATA.

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1981						1982					
DAY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	175.4	183.9	248.3	210.6*	222.5*	230.7*	179.9	284.8*	231.3	172.2*	151.7	134.2
2	168.9	182.6	242.8	204.8*	241.3*	230.3*	177.2	279.7*	228.3	172.0*	147.4	135.1
3	163.3*	192.4	229.0	196.5	255.3*	238.6	176.1	272.9*	230.1	169.9	147.7	141.5
4	165.9	190.6*	233.4	191.1	263.1	241.7	170.4	252.8*	238.3*	158.2	144.7	158.2*
5	152.5	178.8	248.7	193.6*	254.1	260.0	165.5	245.2	245.4*	159.9*	148.7	156.6*
6	148.7	179.6	263.2*	200.3	244.6	262.1	166.8	245.2	230.0*	165.2	153.0	149.6*
7	149.8	173.0	262.5*	204.1*	241.4	275.6*	166.9*	239.9	228.3	164.0*	151.0	158.6*
8	152.4	178.4	266.3*	200.7*	234.7*	287.8	156.9	245.1*	207.1*	162.1*	150.8	167.3
9	150.0*	180.5	256.5	205.4*	232.6	292.4*	164.4	231.7	192.2	167.3*	139.8	177.4
10	156.5*	182.0	247.6	213.4	231.0*	278.7	145.7	213.7	178.9*	177.1*	130.7	196.0*
11	167.4	206.4	240.8	220.0	217.0	266.7*	136.3	211.1*	178.2	178.7*	132.3	224.2
12	167.7*	209.0*	234.2	236.8*	223.5	254.2*	132.4	204.0*	181.2	177.5*	132.3	238.3*
13	174.2*	208.7	230.2	256.2	215.9	218.9	127.5	194.9*	185.5	170.9	129.8	240.2
14	184.2	208.2	228.7*	275.6	207.4	193.0	130.5	185.3	201.3	157.9	132.2	240.8
15	194.5*	225.1	230.4	287.1	191.2	172.6	136.3	180.3	207.6*	152.2	132.1	235.8
16	205.3*	221.8*	227.5	302.4	181.2	157.4	146.7	170.5	227.7	148.2	139.0	210.6*
17	200.8*	228.7	218.2*	302.9	172.7	144.2	152.6	162.5	230.4	145.9*	142.2*	206.0*
18	204.7*	244.1	216.5*	296.5*	160.8*	136.3*	167.6	165.7	226.8	147.0	146.8	200.7*
19	220.3	254.6*	210.5*	278.6	157.0	129.7	169.4	170.9*	219.7*	145.1	155.9	207.5
20	234.7*	269.8	200.1	257.8*	152.0	133.9	167.0	171.3	217.0	144.2	155.6*	207.1
21	228.1*	267.1*	191.2	238.2	153.9	142.2	163.3	165.2	212.4	145.2	165.4*	210.7
22	235.9	262.2*	183.0	218.6	152.7	145.9	152.9	163.7	213.7	156.9*	158.8	197.2*
23	254.7*	254.8	183.8	208.2	151.9	153.0	148.0	173.1	202.4	175.2	155.7*	187.3
24	261.6*	258.9	182.2	201.1	150.4	156.1*	149.1	185.9*	189.0	181.0	144.8*	168.2
25	259.7	254.8	182.0	186.0	159.1	162.1	169.3*	184.1	189.9	182.6*	145.7	159.1*
26	273.1*	272.9*	188.8	172.0	178.3*	166.2	182.7*	204.0	192.8*	178.3	158.0	142.3
27	255.8*	281.6*	202.8	171.2	190.3	176.8	197.2	222.1	195.4*	167.3	171.5*	127.6
28	223.6	275.3	200.9	182.4	206.4*	183.0	234.7	224.0	200.6	161.0*	171.3*	123.1
29	213.3	259.1	204.5	187.5	226.5*	183.6	267.0		198.0	155.6	170.9*	111.7
30	204.2*	265.1	203.8	201.5	231.6	185.7	284.5		194.5*	149.8*	142.8	108.5
31	197.6	256.0*		207.1		182.8	289.1		184.1		136.7	
MEAN	198.2	226.0	221.9	222.8	203.3	201.4	173.4	208.9	208.3	162.9	147.9	177.4

* adjusted for burst
A = interpolated data point

DAILY SOLAR INDICES

JUNE 1982

DAY OF MONTH	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	PROVISIONAL SUNSPOT NUMBERS		OBSERVED FLUX	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_I	$R_{A'}$	OTTAWA 2800	AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245
1	152	10	70	67	130.4	580	253	156	134.2	121	125	84	46	14
2	153	11	83	85	131.3	483	231	151	135.1	120	128	75	40	30
3	154	12	94	94	137.5	595	278	178	141.5	128	128	85	43	12
4	155	13	104	107	153.7*				158.2*					
5	156	14	111	113	152.0*	604	312	205	156.6*	153	132	79	40	14
6	157	15	108	109	145.2*	591	307	181	149.6*	140	123	76	45	41
7	158	16	115	119	154.0*	588			158.6*			71	43	16
8	159	17	127	130	162.4	599	296	200	167.3	151	141	84	46	15
9	160	18	142	145	172.1	607	290	211	177.4	150	139	87	48	23
10	161	19	147	146	190.1*	609	306	226	196.0*	186	144	91	54	28
11	162	20	138	150	217.5	646	342	263	224.2	198	166	99	62	35
12	163	21	144	148	231.1*	683	405	314	238.3*	223	177	107	67	0
13	164	22	139	145	232.8	641	400	273	240.2	220	169	103	56	39
14	165	23	137	148	233.3	630	408	266	240.8	216	175	91	51	18
15	166	24	125	143	228.5	619	352	253	235.8	212	174	111	63	36
16	167	25	128	130	204.1*	592	340	241	210.6*	195	159	104	69	37
17	168	26	136	136	199.6*	557	307	240	206.0*	190	159	88	56	61
18	169	27	134	141	194.3*	591	323	224	200.7*	187	159	109	68	41
19	170	01	134	141	200.9	594	325	231	207.5	189	170	103	62	20
20	171	02	139	152	200.5	610	317	235	207.1	185	167	104	71	53
21	172	03	143	153	204.0	591	343	235	210.7	194	164	109	77	18
22	173	04	146	142	190.9*	614	309	225	197.2*	184	158	102	58	28
23	174	05	116	131	181.3	594	291	200	187.3	176	150	103	59	33
24	175	06	112	114	162.8	588	289	183	168.2	157	146	102	54	23
25	176	07	92	103	154.0*	514	229	167	159.1*	145	137	91	49	20
26	177	08	94	87	137.6	572	273	167	142.3	133	123	93	37	18
27	178	09	49	45	123.4	580	260	150	127.6	113	115	89	34	16
28	179	10	36	35	119.1	577	261	148	123.1	112	107	83	33	18
29	180	11	32	35	108.0	550	261	133	111.7	123	104	81	32	15
30	181	12	38	42	104.9	576	239	131	108.5	111	109	81	33	12
MEAN			110.4	114.5	171.9	592	305	206	177.4	165	145	93	51	36

*Adjusted for burst.
NOTE: Data gaps in AFGL Sagamore Hill data are due to equipment problems.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

	SUNSPOT NUMBERS						2800 MHz FLUX Adjusted to 1 AU	
	Rz or R_I		Ra		Rs		Sa	
Date	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Jul 79	159.4	155	140.5	145	123.1	145	171.4	192
Aug	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140*	154.3	146	152.1	157	198.2	203
Aug	158.7	141*	170.4	147	182.1	158	226.0	203
Sep	167.3	143*	174.5	148	177.7	158	221.9	204
Oct	162.4	142*	157.0	146	178.6	156	222.8	202
Nov	137.5	139*	138.8	142	157.6	151	203.3	197
Dec	150.1	138*	145.0	138	155.5	149	201.4	195
Jan 82	110.7†	133(± 5)*	110.4	133	124.2	144	173.4	---
Feb	162.6†	129(± 8)*	161.0	129	163.6	139	208.9	---
Mar	153.7†	126(± 8)*	155.5	126	163.0	136	208.3	---
Apr	122.5†	123(± 8)*	121.9	123	113.9	133	162.9	---
May	81.4†	119(± 9)*	82.6	119	97.7	129	147.9	---
Jun	110.4†	115(±12)*	---	115	129.6	124	177.4	---
Jul	---	110(±12)*	---	110	---	119	---	---
Aug	---	105(±11)*	---	105	---	112	---	---
Sep	---	99(±10)*	---	100	---	106	---	---
Oct	---	93(±10)*	---	93	---	99	---	---
Nov	---	89(±10)*	---	89	---	94	---	---
Dec	---	85(±11)*	---	85	---	90	---	---

*An asterisk denotes either a value of the observed 12-month running mean or a predicted 12-month average that is based on preliminary observations of the Zurich and International relative sunspot numbers (R_Z and R_I). Parentheses enclose the 90% confidence limits. Shaded boxes enclose the most recent smoothed values; boxes not shaded enclose predicted values. Ra is the new symbol for R_A'. All tabulated entries of Ra are final values.

†R_I replaces R_Z as of January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	133	129	126	123	119	115	110	105	99	93	89	85
	(5)	(8)	(8)	(8)	(9)	(12)	(12)	(11)	(10)	(10)	(10)	(11)
1983	81	78	77	75	72	70	69	68	66	66	66	65
	(11)	(11)	(11)	(12)	(14)	(16)	(17)	(19)	(21)	(22)	(23)	(23)
1984	63	61	56	52	50	50	48	46	44	42	41	39
	(24)	(24)	(25)	(27)	(28)	(29)	(30)	(30)	(29)	(28)	(27)	(27)
1985	37	37	36	36	35	33	32	31	30	29	28	28
	(27)	(26)	(25)	(25)	(25)	(24)	(22)	(21)	(21)	(22)	(23)	(23)
1986	28	27	25	24	22	20	18	17	17	16	16	15
	(23)	(23)	(23)	(22)	(21)	(21)	(20)	(19)	(18)	(16)	(15)	(13)
1987	15	15	15	16	16	18	19					
	(12)	(12)	(12)	(13)	(14)	(15)	(15)					

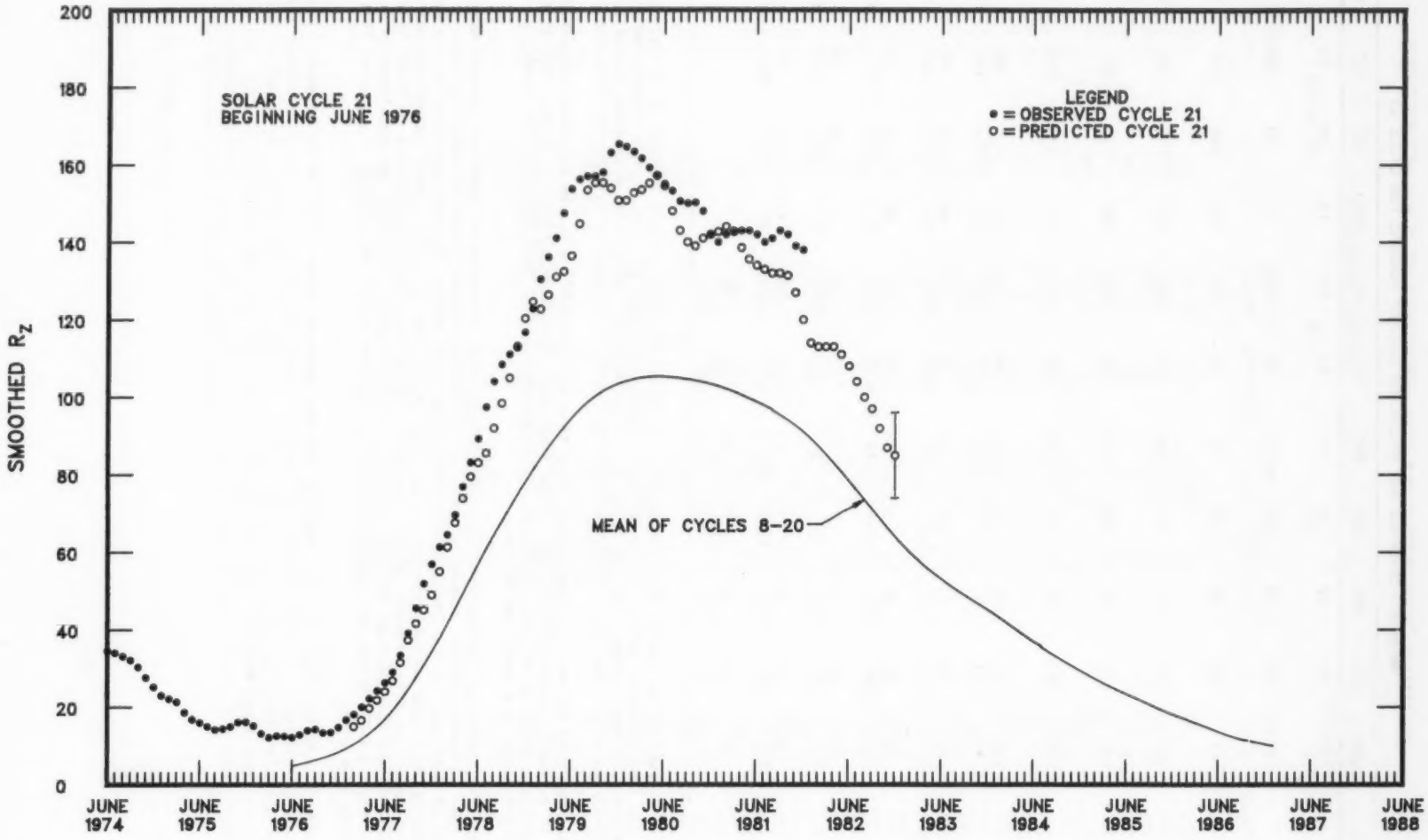
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the last measured value. These observed values are based on final Zurich numbers through 1980, on final International numbers through 1981, and on provisional International numbers thereafter. Some table entries after the June 1976 number will change slightly when final data for 1982 are incorporated.

The entries with numbers in parentheses below them are predictions by the McNish-Lincoln method. (See page 10 in the February 1982 edition of the supplement to Solar-Geophysical Data.) Parentheses enclose the absolute value of the 90% confidence interval--an interval that indicates the window of uncertainty above and below each predicted number.

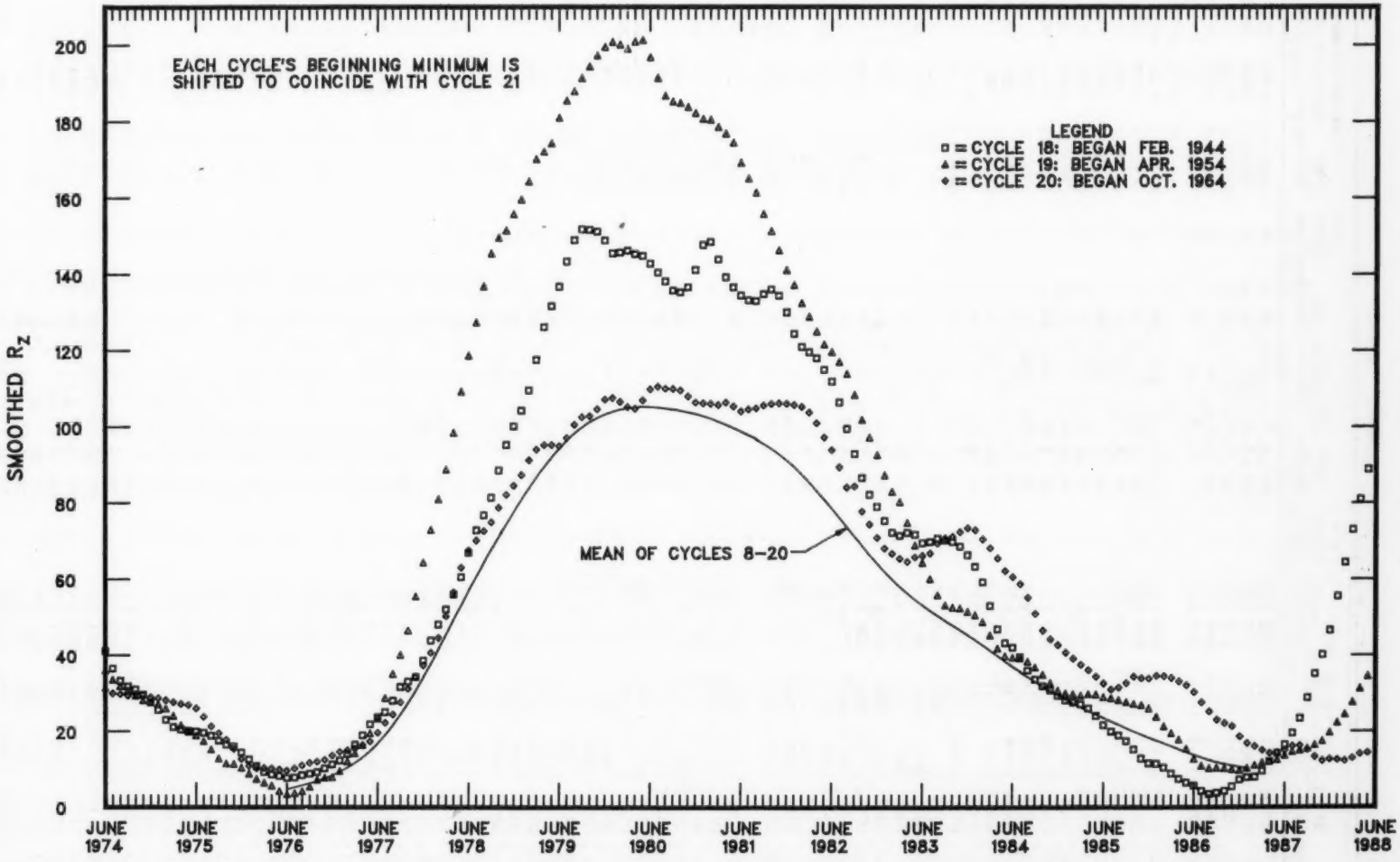
The McNish-Lincoln prediction method generates meaningful estimates of smoothed sunspot numbers for no more than 12 months ahead. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In Solar-Geophysical Data, issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



SUPERPOSITION OF CYCLES 18, 19, AND 20



15 Jun 8

H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
PEKG	01	0317E	0317	0322	N08	E69		06	6.31	5D	SN		P	0317	42		E	
WEND	01	0758	0807	0817	S10	E23		06	3.06	19	SN		C	0807	144	1.6	G	
WEND	01	1523	1527	1540	S10	E18		06	2.99	17	SN		C	1527	81	.9	G	
WEND	01	1644	1652	1700	N08	E65		06	6.57	16	SN		C	1652	63			
WEND	01	1742	1757	1815	S15	W21		05	31.15	33	1B		C	1757	263	3.0		
PEKG	02	0112E	0112	0112D	S09	E13		06	3.03	33D	SN		P	0112	84	.9	EU	
PEKG	02	0112E	0112	0138D	N09	E59		06	6.48	26D	SN		P	0112	67	1.3	E	
PEKG	02	0112E	0138	0138D	N09	E59		06	6.48	26D	SF		P	0138	42	.9	E	
PEKG	02	0138E	0138	0142	S09	E13		06	3.04	4D	SN		P	0138	109	1.2	EU	
PEKG	02	0300E	0303	0307D	S09	E11		06	2.95	7D	SB		P	0303	63	.7	E	
PEKG	02	0301	0303	0307	N09	E58		06	6.48	6	SN		P	0303	67	1.3	E	
YUNN	02	0305E	0305U	0311	S08	E12		06	3.03	6D	SN		P	0305	96	1.0	EG	
BUCA	02	0655	0705	0716D	S04	W36		05	30.60	21D	SF		C	0705	129	1.6		
WEND	02	0658	0704	0730	S04	W35		05	30.67	32	1B		C	0704	350	4.4		
PEKG	02	0700E	0701	0711	S03	W38		05	30.45	11D	1N		P	0701	202	2.6	FZ	
ISTA	02	0706		0736	S04	W37		05	30.53	30	SF							
WEND	02	0738	0740	0742	N09	E55		06	6.45	4	SF		C	0740	44	.8		
ISTA	02	0815		0830	S03	W40		05	30.35	15	SF							
YUNN	02	0836	0847	0900	S07	E81		06	8.43	24	2N		C		177		A	
YUNN	02	0841	0845	0854	S02	W39		05	30.45	13	SN		C		16	.2	E	
YUNN	02	0845	0854	0900	N16	E30		06	4.64	15	SN		C		32	.4	DG	
YUNN	02	0917E	0917U	0925	S06	E78		06	8.23	8D	2N		P	0917	193		A	
YUNN	02	0925	0933U	0933D	N18	E29		06	4.60	8D	SN		P	0933	48	.6	G	
WEND	02	0943	0949	0953	N17	E29		06	4.61	10	SF		C	0949	31	.4	G	
WEND	02	1253	1300	1318	N17	E28		06	4.67	25	SN		C	1300	69	.8	G	
WEND	02	1543	1545	1556	S09	E80		06	8.66	13	SB		C	1545	75			
WEND	02	1643	1644	1652	N11	E51		06	6.54	9	SB		C	1644	75	1.3		
PURP	03	0045E	0045	0054	N17	E20		06	4.55	9D	SN		C	0045	21	.2		
PEKG	03	0215	0218U	0230D	S10	E73		06	8.58	15D	SF		C	0218	8		D	
PEKG	03	0323	0330U	0357D	S10	E72		06	8.55	34D	SB		P	0330	50		D	
YUNN	03	0334E	0335U	0336D	S09	E76		06	8.86	2D	SN		P	0335	32		D	
PEKG	03	0432E	0434	0437	S09	E73		06	8.67	5D	SF		P	0434	42		D	
PEKG	03	0447	0449	0504	S10	E73		06	8.69	17	SF		C	0449	42		DK	
PEKG	03	0447	0457	0504	S10	E73		06	8.69	17	SF		C	0457	29		D	
PEKG	03	0601E	0603	0615	S10	E73		06	8.74	14D	SN		C	0603	42		D	
PEKG	03	0701	0704	0713	S09	E73		06	8.77	12	SF		C	0704	25		D	
YUNN	03	0823	0828	0835	N17	E17		06	4.64	12	SN		C		48	.5		
LEAR	03	0824	0828	0839	N16	E17		06	4.64	15	SN	3	C		57			3758
YUNN	03	0830	0834	0835D	S08	E74		06	8.91	5D	1N		P		80			
LEAR	03	0830	0837	0909	S09	E71		06	8.69	39	1B	3	C		122		FE	3763
PEKG	03	0853E	0855	0908	S10	E71		06	8.71	15D	SN		C	0855	34		DT	
RAMY	03	1141	1148	1326	S09	E72		06	8.89	105	2B	3	C					3763
HOLL	03	1340	1342	1353	S10	E67		06	8.61	13	SF	3	C		25			3763
HOLL	03	1436	1437	1448	S10	E69		06	8.80	12	SF	3	C		28		F	3763
RAMY	03	1442	1443	1450	S08	W06		06	3.16	8	SF	3	C		65		F	3754
HOLL	03	1442	1443	1451	S09	W07		06	3.09	9	SF	3	C		52		F	3754
HOLL	03	1500	1512	1513D	S10	E69		06	8.81	13D	SB	3	C		114		FE	3763
RAMY	03	1505	1510	1511D	S07	E69		06	8.80	6D	SB	3	C		167		FE	3763
HOLL	03	1601	1602	1619	S07	E64		06	8.46	18	SN	3	C		41		F	3763
RAMY	03	1620	1624	1704	S07	E60		06	8.18	44	SN	3	C		30			3763
HOLL	03	1624	1624	1634	S08	E61		06	8.26	10	SF	3	C		23		F K	3763
HOLL	03	1624	1633	1634	S08	E61		06	8.26	10	SF	3	C		13		K	3763
RAMY	03	1711	1739	1739D	S07	E59		06	8.14	28D	SB	3	C		88			3763
HOLL	03	1712	1712	1722	S10	E65		06	8.60	10	SF	3	C		23			3763
PALE	03	1714	1731	1807	N23	E44		06	7.11	53	SN	3	C		46			3762
PALE	03	1714	1739	1815	S07	E61		06	8.29	61	SB	3	C		67		E K	3763
PALE	03	1714	1749	1815	S07	E61		06	8.29	61	SB	3	C		88		K	3763
RAMY	03	1731	1732	1747	N21	E43		06	7.03	16	SF	3	C		22			3762
HOLL	03	1756E	1757U	1807	S10	E69		06	8.94	11D	SF	3	C		96			3763
HOLL	03	1811	1817	1820	S07	E68		06	8.85	9	SF	3	C		12		F	3763
PALE	03	2011E	2015	2031D	N18	E10		06	4.60	20D	SN	3	C		35		E	3758
HOLL	03	2057	2106	2111	S13	E62		06	8.55	14	SF	3	C		27			3763
PALE	03	2115E	2118U	2204	S11	E63		06	8.63	49D	SN	3	C		55		E	3763
HOLL	03	2124	2129	2149	S10	E64		06	8.70	25	SN	3	C		46		F	3763
PALE	03	2203	2205	2222	N17	E09		06	4.60	19	SF	3	C		60			3758
HOLL	03	2250	2259	2307	S05	E60		06	8.44	17	SF	3	C		14			3763
PALE	03	2257	2303	2339	S03	E61		06	8.52	42	SN	3	C		41		E	3763
MANI	03	2300E	2300U	2308D	S05	E59		06	8.37	8D	SF	1	V		20	.4		
HOLL	03	2310	2328	2337	S09	E64		06	8.77	27	SN	3	C		44			3763

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	03	2341	0029	0124D	S12	E60		06	8.51	103D	SB	3	C		131		FEK 3763
HOLL	03	2341	2344	0124D	S12	E60		06	8.51	103D	SN	3	C		34		K 3763
PALE	03	2357	0017	0333D	S08	E62		06	8.65	216D	SB	3	C		85		EFK 3763
PALE	03	2357	0030	0333D	S08	E62		06	8.65	216D	1B	3	C		221		K 3763
MANI	04	0015E	0015U	0047D	S12	E62		06	8.68	32D	SN	1	V		35	.7	FE
MANI	04	0015E	0025U	0047D	S12	E62		06	8.68	32D	SB	1	V		70	1.4	FE
PURP	04	0025E	0034	0036D	S11	E61		06	8.61	11D	SB		P	0034	57	1.3	E
PEKG	04	0045E	0045	0100	S09	E60		06	8.54	15D	SB		P	0045	50	1.0	F
YUNN	04	0215	0216	0231	S04	E60		06	8.58	16	SN		C		80		E
PEKG	04	0244E	0244	0254	S02	W65		05	30.26	10D	SN		P	0244	55	1.3	E
PEKG	04	0257	0303	0314	S10	E63		06	8.86	17	1N		C	0303	126	2.8	FU
YUNN	04	0258	0305	0315	S08	E62		06	8.78	17	SN		C		64	1.4	F
PEKG	04	0345E	0347	0350	S01	W66		05	30.22	5D	SF		P	0347	46		D
PEKG	04	0416	0439	0500	N20	E38		06	7.09	44	1N		P	0439	202	2.8	F
PEKG	04	0510	0512	0519	S11	E58		06	8.58	9	1B		C	0514	118	2.3	F
MANI	04	0522E	0523U	0530D	S09	E60		06	8.73	8D	1B	1	V		150	2.8	FE
YUNN	04	0537E	0538	0540	S08	E59		06	8.66	3D	1B		P		113	2.3	F
PEKG	04	0538	0548	0604	S09	E60		06	8.74	26	1N		P	0548	252	4.9	F
MANI	04	0553E	0555U	0558D	S09	E60		06	8.75	5D	SN	1	V		70	1.3	F
YUNN	04	0555E	0555U	0605	S08	E60		06	8.75	10D	SB		P	0555	48	1.0	E
PEKG	04	0631	0632	0639	S06	E54		06	8.32	8	1B		C	0632	126	2.2	E
MANI	04	0633E	0636U	0638D	S06	E59		06	8.69	5D	1B	1	V		200	3.7	FZ
BUCA	04	0634	0635	0644	S04	E55		06	8.39	10	SN		C	0635	107	1.9	D
YUNN	04	0639E	0639U	0641D	S05	E55		06	8.39	2D	SN		P	0639	64	1.2	D
PEKG	05	0012	0013	0021D	S12	E45		06	8.40	9D	SN		C	0013	105	1.6	FZ
MANI	05	0127E	0131U	0133D	S09	E48		06	8.67	6D	1N	1	V		250	3.9	FZ
YUNN	05	0232E	0235	0245	S10	E42		06	8.26	13D	1N		P		177	2.5	F
YUNN	05	0325	0331	0355	S07	E47		06	8.67	30	2N		C		804	12.2	F
MANI	05	0512E	0514U	0514D	S09	E47		06	8.75	2D	SN	1	V		50	.8	F
BUCA	05	0615	0622	0715	S10	E40		06	8.27	60	1N		C	0622	322	4.4	
ISTA	05	0655		0715	S12	E43		06	8.53	20	3B						F
ISTA	05	0729		0741	S08	E46		06	8.76	12	3B						F
BUCA	05	0730	0732	0755	S07	E48		06	8.91	25	2N		C	0732	537	8.4	
HOLL	05	1721	1739	1824	S10	E38		06	8.58	63	1B	3	C		186		EH 3763
HOLL	05	1839	1841	1848	S10	E35		06	8.41	9	SF	3	C		29		F 3763
HOLL	05	1852	1855	1902	S09	E36		06	8.49	10	SN	3	C		74		F 3763
HOLL	05	1904	2013	2120	S08	E35		06	8.42	136	1B	3	C		198		UEK 3763
HOLL	05	1904	2052	2120	S08	E35		06	8.42	136	1B	3	C		280		K 3763
PEKG	05	2318E	2324	2328	S12	E32		06	8.38	10D	1N		P	2324	239	3.0	FZ
HOLL	05	2320	2320	2330D	S13	E32		06	8.39	10D	SB	3	C		166		E 3763
PEKG	06	0216E	0216	0235	S07	E33		06	8.57	19D	SN		P	0216	84	1.0	F
LEAR	06	0219	0219	0229	S07	E33		06	8.57	10	SN	3	C		29		F 3763
PURP	06	0220E	0220	0223D	S07	E32		06	8.50	3D	SF		P	0220	57	.7	
LEAR	06	0250	0312	0342	S10	E32		06	8.52	52	SB	3	C		95		FE 3763
PEKG	06	0301E	0303	0335	S09	E31		06	8.45	34D	SN		C	0303	168	2.0	FZ
MANI	06	0303E	0308	0337D	S10	E33		06	8.61	34D	SB	1	V		90	1.1	F
LEAR	06	0347	0351	0404	S12	E28		06	8.27	17	SB	3	C		62		FE 3763
PEKG	06	0348	0350	0405	S09	E30		06	8.41	17	1N		C	0350	315	3.8	FIZ
PEKG	06	0423	0425	0431	S08	W37		06	3.41	8	SF		P	0425	101	1.3	E
LEAR	06	0507	0509	0552	S09	E29		06	8.39	45	SN	3	C		50		K 3763
LEAR	06	0507	0528	0552	S09	E29		06	8.39	45	SB	3	C		99		FEK 3763
LEAR	06	0508	0509	0515	N20	E11		06	7.06	7	SF	3	C		28		3762
PEKG	06	0515	0527	0545	S11	E29		06	8.40	30	SN		C	0527	168	2.0	F
LEAR	06	0636	0639	0720	S09	E29		06	8.45	44	SB	3	C		51		FE 3763
ISTA	06	0914		0922	S09	E31		06	8.71	8	SF						
LEAR	06	0915	0915	0918D	S07	E27		06	8.41	3D	SN	3	C		29		3763
WEND	06	1341E		1358D	S12	E26		06	8.53	17D	SN		C	1341	62	.7	
HOLL	06	1357E	1431	1530	S10	E25		06	8.46	93D	1B	2	C		388		E 3763
WEND	06	1424	1437	1528D	S10	E24		06	8.40	64D	SB		C	1437	181	2.0	
RAMY	06	1519E	1522U	1553D	S10	E25		06	8.52	34D	2N	3	C		687		3763
HOLL	06	1613	1617	1620	S10	E21		06	8.25	7	SN	2	C		23		F 3763
HOLL	06	1630E	1654U	1912D	S09	E25		06	8.57	162D	3B	2	C		1265		UE 3763
RAMY	06	1632	1649	1654D	S11	E26		06	8.65	22D	2B	3	C		1127		3763
HOLL	06	1921E	1934U	1944	S11	E26		06	8.76	23D	SF	3	C		34		3763
MANI	06	2354	2355U	2358D	S12	E20		06	8.50	4D	SN	1	V		40	.4	
PEKG	07	0106	0111	0116	S10	E18		06	8.40	10	SN		C	0111	126	1.4	F
PEKG	07	0523	0527	0535	S13	E16		06	8.43	12	SN		C	0527	93	1.0	E

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ISTA	07	0630E		0652	S20	E72		06	12.78	22D	SF						D
ISTA	07	0750		0808	S14	E20		06	8.84	18	SB						D
PEKG	07	0758E	0758	0758D	S11	E18		06	8.69	18D	SN		P	0758	168	1.9	FI
PEKG	07	0821	0829	0855	S08	E12		06	8.25	34	1B		C	0829	421	4.5	FK
PEKG	07	0821	0843	0855	S09	E11		06	8.17	34	1N		C	0843	336	3.6	F
ISTA	07	0826		0902	S10	E13		06	8.33	36	3B						FZR
BUCA	07	0827	0832	0912	S08	E10		06	8.10	45	2N		C	0832	859	9.0	
HOLL	07	1241E	1312	1432	S10	E10		06	8.28	111D	1B	3	C		296		K 3763
HOLL	07	1241E	1334	1432	S10	E10		06	8.28	111D	1B	3	C		462		ZFK 3763
RAMY	07	1305	1317	1419	S09	E12		06	8.45	74	2B	3	C		585		K 3763
RAMY	07	1305	1347	1419	S09	E12		06	8.45	74	2B	3	C		509		K 3763
HOLL	07	1521	1524	1542	S13	E12		06	8.55	21	SN	3	C		50		F 3763
HOLL	07	1603	1610	1622	S09	E11		06	8.49	19	SB	3	C		189		E 3763
HOLL	07	1628	1656	1741	S08	E09		06	8.36	73	1B	3	C		226		FE 3763
PALE	07	1745E	1809	1931	S07	E09		06	8.41	106D	SB	3	C		179		E 3763
HOLL	07	1808	1812	1846	S09	E08		06	8.36	38	1B	3	C		286		FE 3763
PALE	07	2018	2025	2031	S07	E07		06	8.37	13	SN	3	C		40		3763
PALE	07	2037	2039	2059	S09	E07		06	8.38	22	SN	3	C		50		F 3763
PALE	07	2116	2121	2148	S12	E09		06	8.56	32	1B	3	C		227		E 3763
HOLL	07	2117	2121	2142	S14	E08		06	8.49	25	SN	3	C		136		F 3763
PALE	08	0133	0302	0405D	S14	E10		06	8.82	152D	1B	3	C		237		FEK 3763
PALE	08	0133	0320	0405D	S14	E10		06	8.82	152D	SB	3	C		184		K 3763
MANI	08	0555E	0556	0602	S10	E11		06	9.07	7D	SN	1	V		130	1.4	F
ISTA	08	0615		0648	S09	E03		06	8.49	33	1N						F
ISTA	08	0624		0627	N20	E90		06	15.16	3	SF						D
PALE	08	1746	1747	1755	N19	E89		06	15.54	9	SF	3	C				
PALE	08	1755	1803	1900D	S07	W09		06	8.07	65D	1B	3	C		398		UF 3763
HOLL	08	1802E	1802U	1823	S08	W09		06	8.08	21D	1B	3	C		395		UE 3763
HOLL	08	1957E	2004	2108D	S11	W10		06	8.08	71D	1B	3	C		359		FE 3763
PALE	08	2004E	2004U	2040	S10	W08		06	8.23	36D	1B	3	C		334		FE 3763
PALE	08	2110	2112	2115	S10	W10		06	8.13	5	SN	3	C		56		3763
PALE	08	2124	2126	2129	S12	E90		06	15.68	5	SF	3	C				
PALE	08	2220	2221	2231	N19	E83		06	15.27	11	SN	3	C				3772
HOLL	08	2335	2344	0042D	S06	W02		06	8.83	67D	2B	3	C		558		UF 3763
MANI	08	2337E	2344	0001D	S07	E02		06	9.13	24D	1N	1	V		400	4.2	FE
PALE	08	2337	2342	2344D	S07	W02		06	8.83	7D	1B	3	C		402		UF 3763
MANI	09	0233E	0233U	0237D	S12	E86		06	15.59	4D	1N	1	V				
BUCA	09	0726	0729	0755	S05	W07		06	8.79	29	1N		C	0729	430	4.5	
MANI	09	0728	0730	0755	S08	W04		06	9.01	27	1B	1	V		370	3.8	FE
MANI	09	0839E	0840U	0844D	S19	E47		06	12.95	5D	SF	1	V		60	.9	
HOLL	09	1214	1218	1231	S07	W14		06	8.46	17	SB	2	C		75		FEK 3763
HOLL	09	1214	1227	1231	S07	W14		06	8.46	17	SN	2	C		125		K 3763
RAMY	09	1318	1321	1410	S10	W15		06	8.43	52	SN	3	C		57		F 3763
RAMY	09	1413	1513	1520	S10	W16		06	8.39	67	SB	3	C		50		3763
HOLL	09	1510	1518	1533	S09	W16		06	8.43	23	SF	3	C		22		3763
HOLL	09	1714	1714	1718	S19	E37		06	12.54	4	SF	3	C		24		3770
RAMY	09	1836	1845	1904	S11	E73		06	15.27	28	SN	3	C				3773
RAMY	09	1837	1837	1853	S09	W17		06	8.50	16	SN	3	C		31		F 3763
HOLL	09	1921	1922	1934	N17	E68		06	14.98	13	SF	3	C		29		3772
HOLL	09	2212	2225	0032D	S08	W21		06	8.35	140D	1B	3	C		234		K 3763
HOLL	09	2212	2327	0032D	S08	W21		06	8.35	140D	1B	3	C		210		FEK 3763
PALE	09	2220	2232	0014D	S09	W20		06	8.43	114D	1B	1	C		460		FE 3763
MANI	09	2327	2329	2345D	S10	W21		06	8.40	18D	SN	1	V		120	1.3	F
PEKG	10	0026E	0028U	0033	S07	W16		06	8.82	7D	SN		P	0028	109	1.2	E
HOLL	10	0053	0100	0136D	S08	W22		06	8.39	43D	2B	3	C		631		FE 3763
MANI	10	0055	0059	0115	S10	W22		06	8.38	20	2B	1	V		675	7.6	FE
PALE	10	0058	0059	0204D	S10	W21		06	8.46	66D	2B	1	C		700		FE 3763
PEKG	10	0216E	0216	0224	S09	W22		06	8.44	8D	SN		C	0216	176	2.0	E
MANI	10	0216E	0218	0225D	S10	W21		06	8.52	9D	SB	1	V		70	.8	FE
PALE	10	0218E	0218U	0309D	S10	W21		06	8.52	51D	SB	1	C		100		FE 3763
PEKG	10	0251E	0253	0312	S10	W28		06	8.01	21D	SN		P	0253	155	1.8	E
PEKG	10	0320E	0320	0322	S19	E32		06	12.58	2D	SF		P	0322	50	.7	E
PEKG	10	0320E	0325	0327	N18	E65		06	15.09	7D	SN		P	0325	84		E
PEKG	10	0351	0352	0430	S12	W22		06	8.50	39	SN		P	0352	177	2.0	EK
PEKG	10	0427E	0427	0427D	S09	W23		06	8.46	39D	1N		P	0427	218	2.5	F
PEKG	10	0450E	0453	0457D	S09	W23		06	8.47	7D	1N		P	0453	193	2.2	F
PEKG	10	0544E	0545	0547	S09	W24		06	8.44	3D	1N		P	0545	202	2.3	FT
PEKG	10	0550	0610	0630	S10	W24		06	8.44	40	1N		P	0610	235	2.7	FT

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
BUCA	10	0600E	0617	0705	S09	W25		06	8.37	65D	1N		P	0617	430	4.9	
ISTA	10	0625E		0707	S08	W24		06	8.47	42D	1N						BZ
BUCA	10	0730		0750	S14	W21		06	8.72	20	SN		C	0735	107	1.2	E
RAMY	10	1147E	1147	1237	S07	W23		06	8.77	50D	1B	3	C		460		FE 3763
RAMY	10	1309	1310	1313	S20	E24		06	12.38	4	SF	3	C		26		3770
WEND	10	1312	1314	1320	N18	E60		06	15.12	8	SF		C	1314	50	1.1	
HOLL	10	1501	1504	1516	N17	E58		06	15.04	15	SN	3	C		43		3772
HOLL	10	1502	1508	1519	S07	W29		06	8.45	17	SF	3	C		45		F 3763
HOLL	10	1643	1645	1655	N22	W51		06	6.77	12	SF	3	C		32		3762
HOLL	10	1713	1713	1747	S20	E21		06	12.32	34	SF	3	C		25		K 3770
HOLL	10	1713	1737	1747	S20	E21		06	12.32	34	SF	3	C		68		F K 3770
PALE	10	1720	1722	1754	S13	E61		06	15.33	34	SN	3	C		75		3773
PALE	10	1720	1739	1808	S18	E22		06	12.40	48	SF	3	C		76		E 3770
HOLL	10	1720	1722	1728	S14	E62		06	15.41	8	SF	3	C		53		3773
PALE	10	1755	1800	1815	S13	E63		06	15.50	20	SB	3	C		127		3773
HOLL	10	1757	1800	1813	S15	E63		06	15.52	16	SN	3	C		81		3773
PALE	10	1802	1831	1907D	S10	W35		06	8.12	65D	SB	3	C		129		ZFK 3763
PALE	10	1802	1837	1907D	S10	W35		06	8.12	65D	SB	3	C		148		K 3763
PALE	10	1819	1820	1827	S18	E21		06	12.36	8	SN	3	C		34		3770
HOLL	10	1830	1831	2111	S10	W35		06	8.14	161	SB	3	C		125		ZE 3763
PALE	10	1835	1840	1852	S12	E59		06	15.22	17	SB	3	C		50		3773
HOLL	10	1836	1841	1849	S14	E61		06	15.39	13	SN	3	C		43		F 3773
HOLL	10	2002	2002	2011	S14	E64		06	15.68	9	SF	3	C		13		3773
LEAR	11	0432	0435	0448	S07	W36		06	8.49	16	SN	3	C		109		3763
ISTA	11	0635		0830	S09	W38		06	8.42	115	2N						F
LEAR	11	0643	0644	0656	S10	W38		06	8.42	13	SN	3	C		25		F 3763
ISTA	11	0655		0805	S08	E14		06	12.34	70	SF						
HOLL	11	1345	1348	1354	S19	E05		06	11.95	9	SN	3	C		77		F 3770
HOLL	11	1456	1500	1520	S08	W48		06	8.02	24	1B	3	C		303		UF 3763
HOLL	11	1628	1630	1650	S07	W44		06	8.39	22	SN	3	C		43		3763
HOLL	11	1821	1823	1837	S09	W47		06	8.23	16	SF	3	C		26		3763
HOLL	11	1854	1855	1903	S09	W47		06	8.26	9	SF	3	C		29		F 3763
HOLL	11	2118	2121	2127	S12	W46		06	8.42	9	SF	3	C		71		3763
HOLL	11	2128	2131	2135	S08	W46		06	8.44	7	SF	3	C		64		3763
HOLL	11	2138	2144	2214	S08	W47		06	8.38	36	SF	3	C		58		3763
LEAR	12	0237	0250	0307	N15	E81		06	18.25	30	SB	3	C				FE 3776
LEAR	12	0427	0430	0501	N06	E59		06	16.60	34	SF	3	C		19		3774
LEAR	12	0436	0437	0504	S19	E05		06	12.57	28	SN	3	C		81		F 3770
LEAR	12	0454	0454	0459	N09	E84		06	18.51	5	SF	3	C				3776
LEAR	12	0512	0514	0633D	N10	E83		06	18.46	81D	SN	3	C		37		K 3776
LEAR	12	0512	0544	0633D	N10	E83		06	18.46	81D	1B	3	C				YFK 3776
ISTA	12	0850		0900	N17	E36		06	15.11	10	SF						
RAMY	12	1239E	1301	1348	S13	W54		06	8.45	69D	SF	3	C		83		3763
RAMY	12	1302	1303	1313	N19	E34		06	15.14	11	SF	3	C		21		3772
HOLL	12	1307	1333	1345	N09	E76		06	18.25	38	SF	3	C		38		F 3776
RAMY	12	1356	1357	1405	S13	W54		06	8.50	9	SF	3	C		20		3763
RAMY	12	1407	1410	1413	S13	W54		06	8.51	6	SF	3	C		30		3763
HOLL	12	1448	1453	1455	S11	W54		06	8.55	7	SF	3	C		28		3763
HOLL	12	1454	1455	1507	N08	E80		06	18.62	13	SN	3	C				3776
HOLL	12	1457	1457	1504	S11	W54		06	8.56	7	SN	3	C		26		3763
HOLL	12	1536	1537	1539D	N14	E76		06	18.40	30	1N	3	C				F 3776
RAMY	12	1547	1907	2040	N11	E78		06	18.53	293	2N	3	C		293		K 3776
RAMY	12	1547	1622	2040	N11	E78		06	18.53	293	1B	3	C				K 3776
HOLL	12	1613	1619	1647	N09	E83		06	18.91	34	SN	3	C				3776
HOLL	12	1736	1739	1739D	N09	E90		06	19.49	30	1N	3	C				F 3776
RAMY	12	2008	2018	2040	S13	W58		06	8.46	32	SN	3	C		49		3763
HOLL	12	2016	2016	2025	S11	W57		06	8.55	9	SN	3	C		20		3763
RAMY	12	2042	2045	2047D	S08	W59		06	8.44	5D	SN	3	C		91		3763
HOLL	12	2148	2151	2153	N09	E78		06	18.77	5	SF	3	C				3776
HOLL	12	2158	2205	2207	N09	E78		06	18.77	9	SF	2	C				3776
PALE	12	2217E	2217U	2228D	N11	E76		06	18.65	11D	SN	2	C				3776
PALE	12	2314	2318	2324	S08	W61		06	8.39	10	SF	2	C		13		3763
PALE	12	2314E	2321U	2335	N11	E77		06	18.77	21D	SN	2	C				3776
PALE	12	2337E	0005U	0017	N11	E77		06	18.78	40D	SN	2	C				3776
PALE	12	2340E	2359U	0017D	S14	E19		06	14.42	37D	SF	2	C		58		3773
HOLL	12	2343	0012D	0012	S11	W60		06	8.47	29	SF	3	C		41		F 3763
PALE	12	2359E	0006U	0012D	S13	W60		06	8.47	13D	SF	2	C		17		3763
HOLL	13	0004	0005	0009	N09	E75		06	18.64	5	SN	3	C				3776

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
HOLL	13	0024	0039	0042	N09	E76		06	18.72	18	SF	3	C					3776
HOLL	13	0036	0042	0053	S18	W09		06	12.34	17	SF	3	C		22			3770
HOLL	13	0053	0054	0058	N10	E73		06	18.53	5	SF	3	C		11			3776
PEKG	13	0255	0259	0301	S17	W11		06	12.28	6	SN		C	0259	50	.6	E	
LEAR	13	0454	0501	0520	N10	E75		06	18.84	26	SN	3	C				F	3776
ISTA	13	0613		0618	S18	W15		06	12.12	5	SF						E	
PEKG	13	0729E	0731	0732	S14	E15		06	14.45	3D	SF		P	0731	55	.6	E	
RAMY	13	1231	1232	1233	N11	E65		06	18.42	2	SF	3	C		21			3776
RAMY	13	1242	1244	1257	N09	E67		06	18.56	15	SN	3	C		29			3776
HOLL	13	1403	1408	1436	S11	W65		06	8.69	33	SN	3	C		90		F	3763
RAMY	13	1407	1407	1436	S13	W67		06	8.53	29	SN	3	C		74			3763
HOLL	13	1418	1419	1429	S18	W13		06	12.61	11	SF	3	C		43			3770
HOLL	13	1446	1447	1509	N16	E59		06	18.09	23	SN	3	C		32			3776
HOLL	13	1448	1452	1504	N10	E40		06	16.62	16	SF	3	C		34			3774
HOLL	13	1510	1518	1525	S11	W67		06	8.59	15	SF	3	C		22			3763
HOLL	13	1521	1543	1614	N10	E39		06	16.57	53	SF	3	C		28			3774
HOLL	13	1630	1631	1642	N18	E19		06	15.14	12	SF	3	C		48			3772
HOLL	13	1652	1656	1707	S07	W69		06	8.53	15	SF	3	C		66		F	3763
RAMY	13	1701	1701	1718	N09	E37		06	16.49	17	SB	3	C		165			3774
HOLL	13	1702	1702	1712	N07	E38		06	16.56	10	SB	3	C		102		E	3774
RAMY	13	1707	1710	1726	N14	E62		06	18.40	19	SF	3	C		26			3776
RAMY	13	1709	1719	1734	S20	W17		06	12.41	25	SF	3	C		50			3770
HOLL	13	1818	1819	1904	N12	E60		06	18.29	46	SB	3	C		61		FE	3776
RAMY	13	1822E	1822	1829D	N12	E59		06	18.21	7D	1B	3	C		143		FE	3776
HOLL	13	1911	1911	1918	N07	E36		06	16.50	7	SF	3	C		31			3774
HOLL	13	1922	1925	1931	S15	E07		06	14.34	9	SF	3	C		27			3773
HOLL	13	1924	1924	1929	S19	W14		06	12.74	5	SF	3	C		30			3770
PALE	13	1942E	1946U	2006D	S13	W68		06	8.69	24D	SN	2	C		94			3763
HOLL	13	1958	2007	2014	S11	W68		06	8.71	16	SN	3	C		38		F	3763
HOLL	13	2025	2026	2029	S19	W19		06	12.40	4	SF	3	C		27			3770
HOLL	13	2025	2030	2031	N18	E19		06	15.30	6	SF	3	C		20			3772
HOLL	13	2054	2055	2100	S11	W69		06	8.68	6	SF	3	C		16		F	3763
HOLL	13	2102	2105	2125	S11	W69		06	8.68	23	1B	3	C		110		FE	3763
HOLL	13	2127	2127	2132	S11	W69		06	8.70	5	SF	3	C		14		F	3763
HOLL	13	2147	2149	2222	S11	W71		06	8.56	35	SB	3	C		45		FEK	3763
HOLL	13	2147	2202	2222	S11	W71		06	8.56	35	SN	3	C		71		K	3763
HOLL	13	2209	2212	2216	N09	E65		06	18.80	7	SN	3	C		61			3776
MANI	13	2229	2230	2233D	S19	W19		06	12.49	4D	SN	1	V		60	.7		
HOLL	13	2231	2231	2234	S19	W15		06	12.79	3	SF	3	C		25		H	3770
HOLL	13	2250	2252	2300	S12	W70		06	8.67	10	SF	3	C		52			3763
HOLL	13	2326	2328	0038	N08	E62		06	18.63	72	SN	3	C		54		ZF	3776
PEKG	13	2335E	2336	2344	N09	E65		06	18.86	9D	1N		C	2336	118		F	
PEKG	13	2336	0001	0035	N10	E62		06	18.65	59	2N		C	0001	265	5.9	F	
PEKG	13	2352	0030U	0050	S12	W74		06	8.42	58	2B		C	0030	484		F	
HOLL	13	2358	2359	0004	S11	W70		06	8.73	6	SF	3	C		41			3763
PALE	14	0009E	0055U	0117D	N10	E60		06	18.52	68D	SB	2	C		125			3776
HOLL	14	0009	0033	0052	S12	W71		06	8.65	43	2B	3	C		359		FE	3763
PALE	14	0017E	0017	0108	N20	E16		06	15.24	51D	SF	2	C		26		K	3772
PALE	14	0017E	0055U	0108	N20	E16		06	15.24	51D	SF	2	C		29		K	3772
PALE	14	0017E	0035U	0117D	S13	W71		06	8.65	60D	2B	2	C		341			3763
PALE	14	0017E	0055U	0117D	S23	E33		06	16.56	60D	SF	2	C		36			3779
PALE	14	0035E	0045U	0059D	S13	E18		06	15.38	24D	SF	2	C		47			3773
HOLL	14	0053	0104	0112	N08	E58		06	18.39	19	SB	3	C		42			3776
PEKG	14	0101E	0103	0110	N09	E59		06	18.47	9D	1B		C	0103	109	2.2	E	
HOLL	14	0117	0120	0123	S11	W71		06	8.71	6	SF	3	C		11			3763
PEKG	14	0135E	0135U	0142	S11	W75		06	8.42	7D	SN		P	0135	76		D	
HOLL	14	0135	0136	0139	S10	W72		06	8.65	4	SN	3	C					3763
LEAR	14	0138E	0138U	0152	S12	W73		06	8.56	14D	SN	3	C					3763
PEKG	14	0141	0144	0146	N08	E59		06	18.50	5	SN		P	0144	92	1.9	D	
LEAR	14	0142	0142	0204	N09	E59		06	18.50	22	SN	3	C		29			3776
PEKG	14	0143	0144	0151	S07	W80		06	8.08	8	SN		P	0144	50		D	
PEKG	14	0151	0156	0201D	S04	W85		06	7.72	10D	SF		P	0156	42		D	
PEKG	14	0207	0209	0212	N09	E58		06	18.44	5	SN		P	0209	97	2.0	E	
PEKG	14	0208	0218U	0240	S08	W76		06	8.39	32	SN		P	0218	84		F	
PEKG	14	0252	0253	0259	N10	E65		06	19.01	7	SN		P	0253	50		E	
PEKG	14	0317	0320	0324	S13	W73		06	8.62	7	SN		P	0320	88		D	
LEAR	14	0318	0321	0327	S14	W74		06	8.54	9	SN	3	C					3763
LEAR	14	0339	0340	0343	N09	E56		06	18.36	4	SN	3	C		35			3776
PEKG	14	0340E	0340	0359	N09	E57		06	18.43	19D	SN		P	0340	88	1.7	D	
PEKG	14	0403	0423	0545	S08	W76		06	8.47	102	SN		C	0423	50		EK	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Time (UT)	Area Measurement Apparent (10⁻⁶ Disk)	Area Measurement Corr (Sq Deg)	Remarks
PEKG	14	0412E	0412	0414D	N11	E63		06	18.92	2D	SN		P	0412	46	1.1	D
LEAR	14	0457	0501	0547	S13	W77		06	8.39	50	1B	3	C				FEK 3763
LEAR	14	0457	0509	0547	S13	W77		06	8.39	50	1N	3	C				K 3763
PEKG	14	0459	0507	0513	S12	W75		06	8.55	14	1F		C	0507	126		E
YUNN	14	0520E	0532	0535	S10	W77		06	8.43	15D	SN		P		32		E
PEKG	14	0620E	0627	0710	S11	W78		06	8.39	50D	2B		P		378		FR
PEKG	14	0622E	0628	0720	N08	E61		06	18.84	58D	3B		P		715	16.6	FZ
YUNN	14	0623	0625	0631D	N09	E62		06	18.92	8D	1N		P		161	3.6	FRY
LEAR	14	0623	0634	0659	N08	E29		06	16.44	36	SF	3	C		48		F 3774
LEAR	14	0623	0626	0700	S12	W77		06	8.46	37	2B	3	C				FE 3763
YUNN	14	0624	0625	0631D	S10	W80		06	8.25	7D	1B		P		129		H
LEAR	14	0624	0625	0726	N09	E61		06	18.85	62	1B	3	C		289		FE 3776
MANI	14	0625E	0632	0632D	N10	E65		06	19.15	7D	2B	1	V		300	6.1	FE
PEKG	14	0633	0634	0638	N09	E32		06	16.68	5	SN		P	0634	76	.9	D
ISTA	14	0635E		0721	N10	E63		06	19.01	46D	3B						FZ
ISTA	14	0642		0653	S14	W90		06	7.47	11	SF						E
ISTA	14	0710		0715	N17	E26		06	16.28	5	SF						E
LEAR	14	0758	0758	0811	S14	W77		06	8.51	13	SN	3	C				H 3763
LEAR	14	0849	0849	0852D	S14	W78		06	8.47	3D	SN	3	C				3763
RAMY	14	1213	1214	1231D	N12	E55		06	18.66	18D	SB	3	C		52		K 3776
RAMY	14	1213	1228	1231D	N12	E55		06	18.66	18D	1B	3	C		164		UFK 3776
RAMY	14	1236	1237	1238	S13	W80		06	8.48	2	SN	3	C				3763
HOLL	14	1258	1310	1343	N11	E53		06	18.53	45	SN	3	C		78		F 3776
HOLL	14	1356	1358	1405	N11	E52		06	18.50	9	SF	3	C		31		F 3776
RAMY	14	1707	1707	1716	S13	E11		06	15.54	9	SF	3	C		28		F 3773
PALE	14	1743E	1816U	2246D	N11	E50		06	18.50	303D	1B	3	C		171		FEK 3776
PALE	14	1743E	2053	2246D	N11	E50		06	18.50	303D	SB	3	C		135		K 3776
PALE	14	1746E	1849U	1917D	N31	E61		06	19.55	91D	1N	3	C		105		
PALE	14	1813	1826	1836	N09	E23		06	16.49	23	SN	3	C		41		3774
HOLL	14	1814	1826	1833	N08	E24		06	16.56	19	SF	3	C		62		F 3774
HOLL	14	1816	1816	1833	N10	E52		06	18.67	17	SN	3	C		41		F 3776
PALE	14	1826	1828U	1837	S11	W82		06	8.59	11	SN	3	C				3763
PALE	14	1841	1848	1901	N19	E04		06	15.08	20	SF	3	C		27		3772
PALE	14	1849	1856	1917D	N10	E24		06	16.59	28D	SF	3	C		33		3774
HOLL	14	1906	1907	1912	N09	E50		06	18.55	6	SN	3	C		32		F 3776
PALE	14	1911	1917U	1917D	S13	W84		06	8.46	6D	SN	3	C				3763
HOLL	14	1914	1922	1931	S13	W82		06	8.61	17	1N	3	C				3763
PALE	14	1938E	1947U	2024D	N30	E55		06	19.14	46D	SF	3	C		58		
HOLL	14	2045	2048	2058	N10	E49		06	18.55	13	SN	3	C		34		F 3776
HOLL	14	2104	2112	2121	S16	W86		06	8.35	17	SN	3	C				F 3763
PALE	14	2118E	2118U	2133	S13	W88		06	8.24	15D	SN	3	C				3763
PALE	14	2139E	2156U	2205	S13	W88		06	8.26	26D	SF	3	C				3763
PALE	14	2205	2206	2211	S20	W32		06	12.47	6	SF	3	C		28		3770
HOLL	14	2258	2301	2305	S12	W88		06	8.32	7	SF	3	C				3763
HOLL	14	2310	2313	2344	N09	E21		06	16.54	34	SF	3	C		36		3774
PALE	14	2311E	2311U	0013	N09	E21		06	16.54	62D	SN	3	C		47		3774
PALE	14	2311E	2319U	0034	N11	E48		06	18.58	83D	SB	3	C		80		3776
HOLL	14	2311	2316	2350	N12	E47		06	18.51	39	SF	3	C		56		3776
MANI	14	2319E	2320	2328D	N10	E21		06	16.55	9D	SN	1	V		60	.7	
HOLL	15	0013	0019	0034	N13	E52		06	18.94	21	SF	3	C		95		3776
PURP	15	0031	0036	0049	S12	W90		06	8.24	18	1N		C	0036	105		
LEAR	15	0031	0033	0052	S12	W90		06	8.24	21	1N	2	C				F 3763
PALE	15	0031	0033U	0115	S12	W90		06	8.24	44	1B	3	C				3763
HOLL	15	0031	0034	0052	S08	W84		06	8.72	21	1B	3	C		86		3763
MANI	15	0032E	0032U	0035D	S10	W90		06	8.26	3D	1N	1	V				
PALE	15	0050E	0051U	0054D	N05	E19		06	16.46	4D	SF	3	C		40		3774
PALE	15	0050E	0147	0305D	N11	E47		06	18.57	135D	1N	2	C		218		K 3776
PALE	15	0050E	0224U	0305D	N11	E47		06	18.57	135D	2B	2	C		452		UFK 3776
HOLL	15	0101	0113	0118	S11	W88		06	8.42	17	SF	3	C				3763
PALE	15	0125	0128	0133	S12	W90		06	8.27	8	SF	3	C				3763
LEAR	15	0154	0155	0158	N12	E46		06	18.55	4	SF	3	C		43		F 3776
PALE	15	0154	0155	0214	N30	E57		06	19.56	20	SF	3	C		33		
PALE	15	0213E	0213U	0225D	N09	E20		06	16.59	12D	SF	3	C		31		3774
LEAR	15	0218E	0226	0704	N10	E46		06	18.55	286D	1B	3	C		408		K 3776
LEAR	15	0218E	0247	0704	N10	E46		06	18.55	286D	2B	3	C		909		UUK 3776
MANI	15	0219E	0222	0340D	N09	E48		06	18.70	81D	1N	1	V		300	4.6	FE
MANI	15	0219E	0245U	0340D	N09	E48		06	18.70	81D	2B	1	V		500	7.7	FE
YUNN	15	0220	0225	0230	N08	E46		06	18.55	10	1N		C		177	2.7	F
PALE	15	0220	0221	0246	N19	E01		06	15.17	26	SN	3	C		35		3772
YUNN	15	0237E	0250	0315	N09	E48		06	18.71	38D	3N		P		804	12.5	KTU

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
PALE	15	0246	0246U	0305D	N20	W00		06	15.12	19D	SF	3	C		21			3772
LEAR	15	0325	0329	0331	S12	W90		06	8.36	6	SF	3	C					3763
LEAR	15	0331	0331	0334	S12	W90		06	8.36	3	SF	3	C		11			3763
LEAR	15	0414	0415	0420	S14	W90		06	8.37	6	SF	3	C					3763
LEAR	15	0559	0602	0625	S19	E75		06	20.98	26	SF	3	C		37			3780
LEAR	15	0716	0717	0723	S13	W90		06	8.51	7	SF	3	C					3763
YUNN	15	0740E	0744	0752	S21	E71		06	20.77	12D	SN		P		16		D	
YUNN	15	0802	0826	0842D	S21	E71		06	20.78	40D	2B		P		193		KT	
LEAR	15	0806	0813	0902D	S21	E69		06	20.63	56D	1B	3	C		175		K	3780
LEAR	15	0806	0819	0902D	S21	E69		06	20.63	56D	1B	3	C		130		FEK	3780
LEAR	15	0846	0846	0902D	N10	E41		06	18.45	16D	SF	3	C		29		K	3776
LEAR	15	0846	0901	0902D	N10	E41		06	18.45	16D	SN	3	C		36		F K	3776
RAMY	15	1204E	1204U	1207D	N11	E42		06	18.66	3D	1N	3	C		405		FE	3776
HOLL	15	1245	1249	1254	N10	E40		06	18.54	9	SF	3	C		25			3776
RAMY	15	1257	1259	1305	N19	W07		06	15.00	8	SF	3	C		21			3772
HOLL	15	1301	1301	1315	N13	E31		06	17.88	14	SF	3	C		39		F	3776
HOLL	15	1305	1305	1316	S21	E66		06	20.61	11	SF	3	C		13			3780
RAMY	15	1335	1417	1513	N13	E36		06	18.28	98	1B	3	C		387		FE	3776
HOLL	15	1335	1422	1508	N13	E36		06	18.28	93	1B	3	C		353		ZU	3776
RAMY	15	1352	1354	1357	N19	W07		06	15.04	5	SF	3	C		20			3772
HOLL	15	1355	1357	1413	S21	E66		06	20.64	18	SF	3	C		19			3780
HOLL	15	1423	1423	1450	S22	E65		06	20.60	27	SF	3	C		12			3780
RAMY	15	1425	1512	1651	S21	E66		06	20.66	146	2B	3	C		712			3780
HOLL	15	1446	1447	1453	S12	W90		06	8.83	7	SF	3	C					3763
HOLL	15	1509	1512	1558	S22	E66		06	20.71	49	2B	3	C		343		Z	3780
RAMY	15	1602	1645	1654	N14	E40		06	18.69	52	SF	3	C		190			3776
RAMY	15	1746	1747	1753	N14	E43		06	18.99	7	SF	3	C		23			3776
PALE	15	1836	1841	1906	N18	E29		06	17.99	30	1B	3	C		283		FE	3776
RAMY	15	1836	1841	1908	N16	E31		06	18.13	32	SB	3	C		143		FE	3776
HOLL	15	1836	1841	1859	N16	E30		06	18.05	23	SB	3	C		121		FE	3776
PALE	15	2017	2021	2208D	N12	E33		06	18.33	111D	SB	3	C		84		K	3776
PALE	15	2017	2100	2208D	N12	E33		06	18.33	111D	1B	3	C		368		FEK	3776
HOLL	15	2102E	2104	2151D	N12	E34		06	18.44	49D	1B	3	C		152		E	3776
HOLL	15	2238	2240	2248	S14	W41		06	12.84	10	SF	3	C		23			3770
PALE	15	2240E	2254U	2307	S20	W45		06	12.50	27D	SN	3	C		30			3770
LEAR	16	0104	0109	0120	S21	E63		06	20.88	16	SF	3	C		19			3780
LEAR	16	0209	0214	0348	N11	E35		06	18.72	99	2B	3	C		578		FEK	3776
LEAR	16	0209	0228	0348	N11	E35		06	18.72	99	2B	3	C		700		K	3776
LEAR	16	0226	0226	0237	S17	E61		06	20.74	11	SN	3	C		26			3780
LEAR	16	0708	0710	0722	N16	E24		06	18.12	14	SN	3	C		96		F	3776
BUCA	16	0710E		0725	N17	E26		06	18.28	15D	1N		P	0710	322	3.9		
PEKG	16	0721	0725	0728	N12	E30		06	18.57	7	SF		P	0725	13	.1	D	
PEKG	16	0721	0725	0735	N16	E25		06	18.20	14	SF		P	0725	46	.5	E	
LEAR	16	0850	0859	0912D	N17	E22		06	18.04	22D	SN	3	C		110		F	3776
RAMY	16	1145E	1145U	1159	N12	E31		06	18.83	14D	SN	3	C		25		F	3776
RAMY	16	1327	1339	1406	N08	E29		06	18.74	39	SB	3	C		102		F	3776
HOLL	16	1456	1458	1506	S22	E53		06	20.70	10	SF	3	C		33		F	3780
RAMY	16	1458	1458	1509	S19	E52		06	20.59	11	SN	3	C		37			3780
HOLL	16	1531	1531	1556	N10	E26		06	18.60	25	SF	3	C		23		K	3776
HOLL	16	1531	1544	1556	N10	E26		06	18.60	25	SF	3	C		69		F K	3776
HOLL	16	1537	1540	1603D	S22	E51		06	20.57	26D	SN	3	C		88		F	3780
RAMY	16	1538	1542	1615	S18	E51		06	20.54	37	SN	3	C		102			3780
RAMY	16	1540	1543	1548	N12	E26		06	18.61	8	SN	3	C		46			3776
RAMY	16	1626	1640	1640D	N12	E19		06	18.12	14D	1B	3	C		214		UF	3776
RAMY	16	1753	1806	1807	N12	E22		06	18.40	14	SF	3	C		20			3776
RAMY	16	1856	1923	1924	N17	E22		06	18.46	28	SF	3	C		24			3776
HOLL	16	1902E	1908	1925	N15	E25		06	18.69	23D	SF	2	C		90		F	3776
HOLL	16	1922	1926	1935	N11	E27		06	18.84	13	SN	2	C		70		F	3776
HOLL	16	1950	1953	2025D	N11	E27		06	18.86	35D	SN	2	C		120		F	3776
HOLL	16	2023	2340	0047	N10	E19		06	18.28	264	1N	3	C		323			3776
HOLL	16	2030E	2039	2121	S22	E51		06	20.78	51D	1B	2	C		260		YF	3780
HOLL	16	2117E	2119U	2150	N11	E27		06	18.92	33D	SN	2	C		140		F	3776
MANI	16	2319	2338	0004	N12	E23		06	18.71	45	1N	1	V		300	3.4	FE	
HOLL	16	2339	2340	0047	N10	E19		06	18.41	68	1N	3	C		323			3776
LEAR	17	0238	0243	0332	N11	E23		06	18.84	54	1B	3	C		269		FE	3776
LEAR	17	0417	0418	0430	N15	E24		06	19.00	13	SN	3	C		62		F	3776
ISTA	17	0819		0836	N10	E20		06	18.85	17	SF						E	
BERN	17	1052E	1052	1109	N12	E18		06	18.81	17D	2B		C				DIGITAL	
BERN	17	1307	1308	1310	N11	E15		06	18.68	3	SN		C				DIGITAL	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
BERN	17	1338	1339	1344	N13	E23		06	19.30	6	SN		C				DIGITAL
HOLL	17	1339E	1340	1655D	N11	E10		06	18.32	196D	SB	3	C		192		F 3776
RAMY	17	1456	1458	1536	N20	E19		06	19.08	40	SN	3	C		37		3776
RAMY	17	1622	1624	1635	N16	E17		06	18.97	13	SB	3	C		68		3776
RAMY	17	1633	1634	1638	S17	E38		06	20.58	5	SN	3	C		69		3780
RAMY	17	1634	1643	1717	N08	W15		06	16.56	43	SN	3	C		144		3774
HOLL	17	1835	1836	1922	N13	E16		06	18.98	47	SN	3	C		175		F 3776
HOLL	17	1901	1902	1946	S19	E43		06	21.08	45	SN	3	C		127		F 3780
LEAR	18	0123	0134	0241	N13	E75		06	23.72	78	SF	2	C				K 3782
LEAR	18	0123	0156	0241	N13	E75		06	23.72	78	2N	2	C				F K 3782
PEKG	18	0200E	0200	0220	N13	E75		06	23.75	20D	SN		P	0200	67		E
PEKG	18	0348	0351	0355	N11	E09		06	18.84	7	SF		P	0351	34	.3	D
PEKG	18	0348	0351	0401	N15	E41		06	21.26	13	SF		P	0351	58	.8	E
LEAR	18	0352	0358	0402	N15	E42		06	21.34	10	SN	3	C		23		3781
YUNN	18	0358	0359	0402	N15	E42		06	21.35	4	SN		C		32	.5	D
PEKG	18	0427E	0427	0430	N13	E75		06	23.85	3D	SN		P	0427	50		E
PURP	18	0430	0436	0458	N16	E73		06	23.73	28	SF		P	0436	49		
LEAR	18	0520	0522	0533	S19	W77		06	12.34	13	SF	3	C				3770
YUNN	18	0524	0526	0530	S17	W70		06	12.90	6	SN		C		48		H
LEAR	18	0546	0550	0635	S23	E35		06	20.94	49	SN	3	C		96		S 3780
YUNN	18	0547	0551	0554	N15	E42		06	21.42	7	SN		C		32	.5	H
YUNN	18	0547	0551	0554D	S21	E33		06	20.77	7D	SN		P		32	.4	D
PEKG	18	0550	0601	0615	S23	E35		06	20.94	25	SN		P	0601	63	.9	D
PURP	18	0552E	0553	0610	S21	E36		06	21.01	18D	SN		C	0553	31	.4	
WEND	18	0611E	0611	0618	S22	E36		06	21.03	7D	SF		C	0611	31	.4	
LEAR	18	0718	0720	0727	S19	W80		06	12.19	9	SN	3	C				3770
WEND	18	0718	0720	0727	S18	W80		06	12.21	9	SN		C	0720	38		
YUNN	18	0720E	0720U	0725	S18	W83		06	11.98	5D	1N		P	0720	64		H
LEAR	18	0751	0751	0759	S18	W65		06	13.37	8	SF	3	C		12		3783
LEAR	18	0752	0759	0827	N14	E71		06	23.70	35	SN	3	C		56		3782
WEND	18	0752	0758	0803D	N14	E78		06	24.23	11D	SF		C	0758	19		
YUNN	18	0758	0805	0826	N13	E71		06	23.69	28	SN		C		32		D
RAMY	18	1254	1255	1309	N12	E04		06	18.84	15	SF	3	C		26		3776
RAMY	18	1254E	1326	1326	S19	W67		06	13.42	32D	SN	3	C		100		3783
RAMY	18	1255	1255	1328	S20	W83		06	12.19	33	SN	3	C				3770
RAMY	18	1327	1327	1507	S19	W68		06	13.37	100	SN	3	C		90		F 3783
RAMY	18	1333	1335	1339	N13	E04		06	18.87	6	SN	3	C		27		3776
RAMY	18	1410	1411	1416	S22	E27		06	20.67	6	SF	3	C		26		3780
RAMY	18	1435	1436	1438	S20	E32		06	21.06	3	SF	3	C		23		3780
RAMY	18	1513	1514	1538	N13	W08		06	18.03	25	SB	3	C		95		UF 3776
RAMY	18	1547	1551	1612	N11	W01		06	18.58	25	SN	3	C		62		3776
RAMY	18	1903	1903	1910	S19	E29		06	21.01	7	SN	3	C		36		3780
RAMY	18	1947	2008	2038	N12	W07		06	18.30	51	SN	3	C		71		3776
RAMY	18	1958	2008	2123	S20	W80		06	12.71	85	SN	3	C		30		3770
RAMY	18	2103	2105	2114	N10	W03		06	18.65	11	SF	3	C		43		3776
RAMY	18	2137	2138	2141D	N19	W10		06	18.14	4D	SB	3	C		141		FE 3776
HOLL	18	2138	2139	2229	N19	W11		06	18.06	51	1B	3	C		226		F 3776
PALE	18	2209E	2209U	2235D	N19	W12		06	18.01	26D	SN	2	C		72		F 3776
MANI	18	2323E	2324	2335D	N16	E34		06	21.56	12D	SF	1	V		40	.5	
LEAR	19	0006	0007	0012	N06	W02		06	18.85	6	SF	3	C		54		3776
LEAR	19	0019	0020	0044	N10	W04		06	18.71	25	SF	3	C		35		F 3776
LEAR	19	0048	0049	0051D	N14	W01		06	18.96	3D	1B	3	C		307		FE 3776
MANI	19	0048	0049	0055D	N15	W01		06	18.96	7D	1B	1	V		210	2.2	FE
HOLL	19	0048	0049	0056	N14	W02		06	18.88	8	1B	3	C		215		FE 3776
LEAR	19	0249	0251	0317	N15	W03		06	18.89	28	SN	3	C		44		3776
LEAR	19	0415	0418	0435	N16	E25		06	21.07	20	SF	3	C		29		F 3781
YUNN	19	0425	0426	0432	N15	E26		06	21.15	7	SN		C		32	.4	E
LEAR	19	0502	0505	0509	N13	W03		06	18.98	7	SN	3	C		23		3776
LEAR	19	0709	0709	0720	N09	W11		06	18.47	11	SN	3	C		47		3776
YUNN	19	0711	0725	0732	N14	E68		06	24.44	21	1N		P		80		
YUNN	19	0711	0725	0732	N17	E23		06	21.05	21	SN		C		80	.9	D
LEAR	19	0715	0715	0722	N13	E64		06	24.13	7	SF	3	C		26		3782
ISTA	19	0750		0754	N11	W09		06	18.65	4	SF						
LEAR	19	0750	0753	0813	N10	W10		06	18.57	23	SN	3	C		51		F 3776
ISTA	19	0825		0843	N12	W11		06	18.52	18	SF						
ISTA	19	0825		0905	N18	W02		06	19.20	40	SF						
LEAR	19	0825	0831	0905D	N13	W08		06	18.75	40D	1N	3	C		241		F 3776
YUNN	19	0827	0834	0858	N12	W12		06	18.45	31	SF		C		64	.7	E
RAMY	19	1330E	1331U	1353	N09	W15		06	18.44	23D	SN	3	C		89		3776

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	19	1515	1518	1546	N13	E60		06	24.17	31	SB	3	C		97		3782
RAMY	19	1517	1519	1551	N16	E60		06	24.19	34	SB	3	C		104		3782
HOLL	19	1610	1611	1619	N14	W09		06	18.99	9	SN	3	C		58		3776
HOLL	19	1616	1631	1723	N15	E18		06	21.04	67	SN	3	C		116		F K 3781
HOLL	19	1616	1645	1723	N15	E18		06	21.04	67	SN	3	C		148		K 3781
HOLL	19	1632	1633	1639	N13	W10		06	18.93	7	SN	3	C		30		3776
HOLL	19	1649	1656	1659	N13	W13		06	18.72	10	SF	3	C		104		3776
HOLL	19	1709	1720	1808	N14	W12		06	18.81	59	1B	3	C		264		E 3776
PALE	19	1719	1722	1748	N14	W11		06	18.89	29	1B	2	C		283		3776
PALE	19	1757	1757	1805	N15	E56		06	23.99	8	SN	2	C		22		3782
PALE	19	1814	1814	1840	N17	E17		06	21.05	26	SN	3	C		21		E 3781
PALE	19	1816	1817	1824	N15	W11		06	18.93	8	SB	3	C		158		3776
HOLL	19	1816	1818	1832	N15	W11		06	18.93	16	SN	3	C		147		H 3776
PALE	19	1826	1836	1847	N14	W17		06	18.48	21	SN	3	C		25		E 3776
HOLL	19	1833	1835	1839	N13	W12		06	18.87	6	SF	3	C		35		3776
HOLL	19	1919	1930	2027	N14	W24		06	17.99	68	SN	3	C		121		K 3776
HOLL	19	1919	1955	2027	N14	W24		06	17.99	68	2B	3	C		537		UEK 3776
PALE	19	1920	1920	1957D	N13	W25		06	17.92	37D	SN	3	C		63		K 3776
PALE	19	1920	1956	1957D	N13	W25		06	17.92	37D	2B	3	C		536		FEK 3776
PALE	19	1941	1955	1957D	N17	E18		06	21.19	16D	SN	3	C		47		E 3781
HOLL	19	1956	1956	1959	N16	E19		06	21.27	3	SF	3	C		28		3781
HOLL	19	1956	1959	2015	N13	E56		06	24.06	19	SB	3	C		42		F 3782
HOLL	19	1959	2007	2029	N16	E18		06	21.20	30	SN	3	C		45		F 3781
HOLL	19	2106	2110	2114	N16	E16		06	21.09	8	SF	3	C		26		3781
HOLL	19	2143	2147	2153	N16	E14		06	20.97	10	SN	3	C		47		3781
LEAR	20	0014	0021	0100	N13	W14		06	18.95	46	1B	3	C		203		FE 3776
MANI	20	0015	0020	0035	N14	W14		06	18.95	20	1B	1	V		195	2.1	FE
HOLL	20	0015	0020	0050	N14	W15		06	18.88	35	SB	3	C		183		FE 3776
MANI	20	0017	0025	0045	N15	E14		06	21.07	28	SB	1	V		95	1.0	FE
HOLL	20	0018	0025	0053	N15	E15		06	21.15	35	SB	3	C		97		FE 3781
LEAR	20	0020	0026	0057	N16	E13		06	21.00	37	SB	3	C		81		FE 3781
YUNN	20	0024	0027	0033	N15	E14		06	21.08	9	SN		P		161	1.8	F
YUNN	20	0024	0027	0039	N13	W15		06	18.88	15	SN		P		96	1.1	U
YUNN	20	0113	0114	0115D	N13	W27		06	18.01	2D	SN		P		96	1.1	
HOLL	20	0113	0113	0118	N12	W26		06	18.09	5	SB	3	C		54		3776
LEAR	20	0114	0114	0121	N11	W26		06	18.09	7	SB	3	C		81		3776
LEAR	20	0147	0148	0200	N17	E17		06	21.37	13	SN	3	C		39		3781
LEAR	20	0150	0155	0308	N12	W15		06	18.95	78	1B	3	C		316		3776
MANI	20	0151	0153	0200D	N14	W17		06	18.79	9D	2B	1	V		875	9.5	FE
YUNN	20	0155E	0157	0240	N11	W19		06	18.65	45D	2B		P		852	9.4	FK
YUNN	20	0230	0231	0237	N16	E17		06	21.39	7	SN		C		32	.4	D
LEAR	20	0230	0230	0249	N16	E17		06	21.39	19	SN	3	C		26		3781
LEAR	20	0250	0255	0308	N12	W15		06	18.99	18	1B	3	C		316		3776
YUNN	20	0252	0255	0257	N14	W17		06	18.83	5	SN		C		80	.9	
LEAR	20	0334	0336	0342	N18	E14		06	21.22	8	SF	3	C		39		3781
LEAR	20	0358	0401	0417	N13	E13		06	21.15	19	SN	3	C		105		F 3781
LEAR	20	0400	0404	0411	N11	W28		06	18.06	11	SB	3	C		181		3776
YUNN	20	0404E	0407	0410	N12	W29		06	17.98	6D	SN		P		48	.6	
LEAR	20	0429	0429	0437	N13	E51		06	24.04	8	SF	3	C		19		3782
LEAR	20	0442	0443	0448	N11	W18		06	18.84	6	SN	3	C		28		F 3776
LEAR	20	0452	0459	0507	N16	E13		06	21.19	15	SN	3	C		63		3781
LEAR	20	0533	0534	0536	N14	E12		06	21.14	3	SN	3	C		50		3781
LEAR	20	0552	0553	0615	N11	W30		06	17.99	23	SN	3	C		46		K 3776
LEAR	20	0552	0608	0615	N11	W30		06	17.99	23	SB	3	C		62		FEK 3776
LEAR	20	0629	0630	0646	N12	E11		06	21.10	17	SN	3	C		43		F 3781
LEAR	20	0633	0637	0646	N11	W30		06	18.01	13	1B	3	C		300		FE 3776
ISTA	20	0634		0640	N15	W31		06	17.92	6	1N						D
PURP	20	0634	0635	0638D	N13	W33		06	17.78	4D	SN		P	0635	84	1.1	
LEAR	20	0651	0659	0726	N13	E11		06	21.12	35	SN	3	C		117		F 3781
ISTA	20	0655		0711	N13	E11		06	21.12	16	SF						E
HOLL	20	1209E	1209U	1232	N18	E13		06	21.50	23D	SN	3	C		85		F 3781
HOLL	20	1416	1420	1427	N13	E08		06	21.20	11	SN	3	C		48		F 3781
WEND	20	1712E	1712	1727D	N13	E08		06	21.32	15D	SB		C	1712	162	1.7	
PALE	20	1724E	1724U	1830	N13	E06		06	21.18	66D	1B	3	C		267		FE 3781
PALE	20	1842	1849	1901	N15	E41		06	23.89	19	SN	3	C		24		E 3782
HOLL	20	2041E	2042U	2100	N15	E02		06	21.01	19D	SN	3	C		90		F 3781
HOLL	20	2224	2232	2250D	N16	E01		06	21.01	26D	1B	3	C		298		FE 3781
LEAR	21	0058	0128	0242	N13	W00		06	21.04	104	2B	3	C		531		UF 3781
YUNN	21	0110	0113	0116	N15	E02		06	21.20	6	SN		C		80	.9	E

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
YUNN	21	0120	0128	0142	N15	E02		06	21.21	22	SN		C		96	1.0	E
LEAR	21	0234	0237	0256	N16	W37		06	18.30	22	SF	3	C		53		F 3776
LEAR	21	0244	0251	0547	N16	W05		06	20.73	183	1B	0	C		361		K 3781
LEAR	21	0244	0455	0547	N16	W05		06	20.73	183	1B	0	C		286		FEK 3781
YUNN	21	0350	0352	0400	N16	W07		06	20.63	10	SN		P		64	.7	E
PEKG	21	0452E	0454	0602	N15	W05		06	20.82	70D	1B		P	0454	336	3.6	F
LEAR	21	0600	0606	0621	S16	W06		06	20.79	21	SN	3	C		98		3780
BUCA	21	0600E		0620	S16	W07		06	20.72	20D	SN		C	0603	107	1.2	E
PEKG	21	0601	0603U	0626	S17	W07		06	20.72	25	SB		C	0603	97	1.1	E
LEAR	21	0604	0613	0630	N18	E03		06	21.48	26	SN	3	C		105		F 3781
PEKG	21	0610	0613	0618	N13	W11		06	20.43	8	SN		P	0613	63	.7	D
PEKG	21	0610	0613	0623	N17	E03		06	21.49	13	SN		C	0613	189	2.0	F
YUNN	21	0611	0615	0625	N18	E03		06	21.49	14	SN		P		48	.5	E
LEAR	21	0640	0648	0653	N15	W02		06	21.13	13	SN	3	C		35		F 3781
LEAR	21	0742	0744	0800	N16	W06		06	20.87	18	SN	3	C		61		F 3781
PEKG	21	0744	0749	0806	N17	W06		06	20.87	22	SN		C	0749	126	1.4	E
BUCA	21	0744		0759	N17	W06		06	20.87	15	SN		C	0744	150	1.6	E
PEKG	21	0748E	0748	0813D	N13	E36		06	24.04	25D	SN		C	0748	50	.6	D
PEKG	21	0822	0826	0832	N15	W07		06	20.82	10	SN		C	0826	105	1.1	E
LEAR	21	0822	0828	0846	N15	W08		06	20.74	24	SN	3	C		36		3781
YUNN	21	0850E	0854	0905	N14	W03		06	21.14	15D	SN		P		64	.7	E
PEKG	21	0852E	0852	0903	N13	W04		06	21.07	11D	SN		P	0852	151	1.6	F
LEAR	21	0908	0912	0913D	N14	W07		06	20.85	5D	SN	2	C		44		F 3781
HOLL	21	1323	1325	1343	N14	E32		06	23.98	20	SB	3	C		85		FE 3782
HOLL	21	1344	1349	1405	N16	W44		06	18.23	21	SF	3	C		31		F 3776
HOLL	21	1347	1347	1353	N14	E32		06	23.99	6	SF	3	C		29		F 3782
HOLL	21	1520	1520	1528	N17	W45		06	18.22	8	SN	3	C		22		F 3776
HOLL	21	1522	1525	1534	N17	W10		06	20.88	12	SN	3	C		36		3781
HOLL	21	1559	1603	1609	N15	E32		06	24.09	10	SF	3	C		44		F 3782
HOLL	21	1607	1611	1803	N15	W08		06	21.07	116	1B	3	C		440		E K 3781
HOLL	21	1607	1653	1803	N15	W08		06	21.07	116	SB	3	C		149		K 3781
PALE	21	1738	1748	1800	N15	E29		06	23.93	22	SN	3	C		49		F 3782
HOLL	21	1746	1746	1750	N14	E30		06	24.01	4	SF	3	C		23		3782
HOLL	21	1804	1811	1843	N17	W46		06	18.25	39	SF	3	C		49		3776
PALE	21	1808	1809	1819	N10	W42		06	18.60	11	SN	3	C		29		F 3776
PALE	21	1850	1850	1856	N10	W43		06	18.55	6	SF	3	C		22		3776
PALE	21	1904E	1915	1925D	N16	W11		06	20.96	21D	SB	3	C		38		F 3781
PALE	21	1904E	1917	1925D	N16	E30		06	24.07	21D	SN	3	C		72		3782
HOLL	21	1904	1913	1937	N14	E28		06	23.91	33	SN	3	C		87		3782
HOLL	21	1925	1930	1955	N15	W10		06	21.05	30	SN	3	C		56		3781
PALE	21	1932E	1932U	1950D	S16	W14		06	20.75	18D	SF	2	C		22		3780
HOLL	21	1933	1933	1946	S19	W10		06	21.05	13	SF	3	C		23		3780
HOLL	21	2114	2121	2143	N13	E28		06	24.00	29	SN	3	C		65		3782
HOLL	21	2214	2217	2316D	N15	W12		06	21.02	62D	SN	3	C		82		K 3781
HOLL	21	2214	2306	2316D	N15	W12		06	21.02	62D	1B	3	C		423		UFK 3781
MANI	21	2305E	2305U	2314D	N14	W13		06	20.98	9D	1N	1	V		250	2.7	FE
LEAR	21	2343E	0012	0058	N16	W13		06	21.00	75D	1B	3	C		251		FEK 3781
LEAR	21	2343E	2355	0058	N16	W13		06	21.00	75D	SN	3	C		172		K 3781
MANI	22	0011E	0011U	0017D	N14	E24		06	23.82	6D	SF	1	V		80	.9	
MANI	22	0011E	0011U	0017D	N15	W15		06	20.87	6D	SN	1	V		120	1.3	F
PEKG	22	0107	0128	0138	N15	W15		06	20.91	31	1N		C	0128	463	5.0	F
LEAR	22	0121	0128	0153	N15	W16		06	20.84	32	SN	3	C		128		F 3781
PEKG	22	0125	0128	0135	N15	E26		06	24.03	10	1N		P	0128	210	2.5	F
LEAR	22	0125	0125	0129	S17	W19		06	20.61	4	SF	3	C		30		F 3780
LEAR	22	0148	0206	0217	S17	W18		06	20.71	29	SF	3	C		24		3780
LEAR	22	0244	0252	0327	N14	E25		06	24.00	43	SN	3	C		146		F 3782
LEAR	22	0246	0247	0255	N14	W17		06	20.83	9	SF	3	C		30		3781
PEKG	22	0247E	0251	0330	N15	E25		06	24.01	43D	1N		P	0251	197	2.3	F
LEAR	22	0511	0517	0741	N16	W16		06	21.00	150	SN	3	C		45		K 3781
LEAR	22	0511	0538	0741	N16	W16		06	21.00	150	1B	3	C		243		FEK 3781
PEKG	22	0531E	0540	0617	N17	W15		06	21.09	46D	1N		P	0540	421	4.6	F
MANI	22	0532E	0534	0605	N15	W16		06	21.02	33D	1B	1	V		275	3.0	FE
PEKG	22	0547	0556	0602	N16	W15		06	21.10	15	1B		C	0556	421	4.6	F
PEKG	22	0620	0629	0710	N17	W17		06	20.97	50	1N		C	0629	463	5.1	F
YUNN	22	0623E	0628U	0631D	N17	W19		06	20.82	8D	SN		P	0628	96	1.1	E
YUNN	22	0653E	0653	0656	N17	W20		06	20.77	3D	SN		P		64	.7	E
PEKG	22	0750	0756	0756D	N08	W48		06	18.73	6D	SF		P	0756	34	.5	E
LEAR	22	0755	0757	0806	N14	W51		06	18.47	11	SF	3	C		36		3776
LEAR	22	0829	0831	0855	N14	W19		06	20.92	26	SN	3	C		102		3781
HOLL	22	1422	1436	1550	N17	W21		06	21.00	88	1B	3	C		392		UE 3781

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
HOLL	22	1540	1555	1612	N14	E18		06	24.01	32	SF	3	C		50			3782
PALE	22	1732	1734	1750	N16	W21		06	21.14	18	SF	3	C		37			3781
PALE	22	1817	1818	1828	N15	E12		06	23.67	11	SB	3	C		52		F	3782
HOLL	22	1829	1837	2015D	N16	W22		06	21.10	106D	1B	3	C		319		E	3781
PALE	22	1830	1833	1937	N17	W22		06	21.10	67	SB	3	C		188		FE	3781
HOLL	22	1837	1846	1916	N11	W56		06	18.56	39	SN	3	C		105			3776
PALE	22	1845	1846	1859	N09	W55		06	18.65	14	SB	3	C		60		FE	3776
HOLL	22	2336	0007	0110	N18	W24		06	21.15	94	1B	3	C		252			3781
PEKG	22	2340E	0009	0050	N18	W24		06	21.16	70D	1B		P	0009	336	3.9	FT	
LEAR	23	0009E	0009	0043	N16	W25		06	21.11	34D	SB	3	C		178		FE	3781
HOLL	23	0049	0050	0104	N16	E08		06	23.64	15	SN	3	C		36			3782
PEKG	23	0050	0055	0108	N16	E09		06	23.72	18	SN		C	0055	42	.4	D	
LEAR	23	0050	0050	0101	N16	E09		06	23.72	11	SN	3	C		23			3782
PEKG	23	0129	0135	0148	N11	W60		06	18.54	19	SN		C	0135	50	1.1	D	
PEKG	23	0130	0134	0158D	N14	E13		06	24.05	28D	SN		C	0134	46	.5	D	
LEAR	23	0232	0236	0259	N18	W20		06	21.58	27	SN	3	C		58		F	3781
PEKG	23	0235E	0235U	0305	N18	W22		06	21.43	30D	1N		C	0235	210	2.4	E	
PEKG	23	0310	0314	0320	N16	E07		06	23.66	10	SN		C	0314	76	.8	E	
PEKG	23	0315	0316	0318	N11	W69		06	17.94	3	SN		C	0316	42		D	
PEKG	23	0327	0335	0404	N18	W26		06	21.16	37	SN		C	0335	168	2.0	E	
LEAR	23	0329	0335	0356	N17	W26		06	21.17	27	SN	3	C		70		F	3781
LEAR	23	0339	0342	0352	N12	W69		06	17.95	13	SN	3	C		121		F	3776
PEKG	23	0340	0344	0350	N13	W70		06	17.87	10	1B		C	0344	147		E	
PEKG	23	0350E	0350U	0350D	N15	E12		06	24.07	10D	SF		C	0350	126	1.4	E	
LEAR	23	0443	0504	0556	N17	W27		06	21.14	73	SN	3	C		107		F	3781
PEKG	23	0444E	0456U	0530D	N17	W27		06	21.14	46D	SN		P	0456	126	1.5	E	
PEKG	23	0550	0610	0619D	N17	W29		06	21.04	29D	SN		P	0610	84	1.0	E	
ISTA	23	0628		0731	N17	W30		06	20.99	63	3B						F	
LEAR	23	0630	0630	0638	N07	W61		06	18.70	8	SN	3	C		23		F	3776
LEAR	23	0630	0643	0828	N17	W28		06	21.14	118	SB	3	C		88		K	3781
LEAR	23	0630	0653	0828	N17	W28		06	21.14	118	1B	3	C		234		FEK	3781
BUCA	23	0631	0657	0800D	N17	W30		06	20.99	89D	2N		C	0657	967	11.9		
PEKG	23	0634	0652U	0755D	N17	W30		06	20.99	81D	2N		C	0652	421	5.2	FK	
PEKG	23	0634	0725U	0755D	N16	W32		06	20.84	81D	2N		C	0725	505	6.3	FI	
LEAR	23	0801	0802	0809	N08	W61		06	18.76	8	SN	3	C		16			3776
LEAR	23	0838	0840	0856	N11	W61		06	18.77	18	SN	3	C		41			3776
PEKG	23	0906	0914	0930D	N16	W32		06	20.95	24D	SN		C	0914	109	1.3	F	
LEAR	23	0908	0911	0918D	N14	W35		06	20.73	10D	SN	3	C		35			3781
PEKG	23	1001	1007	1010	N17	W29		06	21.21	9	SF		C	1007	92	1.1	ET	
RAMY	23	1145E	1159	1408	N17	W31		06	21.13	143D	2B	3	C		575			3781
HOLL	23	1235E	1235U	1314	N15	W31		06	21.18	39D	SF	3	C		57		F	3781
RAMY	23	1236	1238	1242	N13	W70		06	18.24	6	SF	3	C		35			3776
HOLL	23	1546	1548	1623	N15	W28		06	21.54	37	SF	3	C		75		F	3781
RAMY	23	1711	1717	1737	N18	W33		06	21.20	26	SB	3	C		77		F	3781
HOLL	23	1716	1717	1740	N18	W31		06	21.36	24	SN	3	C		48		F	3781
PALE	23	1717	1717	1734	N17	W32		06	21.29	17	SF	3	C		39		F	3781
HOLL	23	1751	1802	1822	N17	W36		06	21.01	31	SN	3	C		31			3781
PALE	23	1754	1800	1827	N16	W36		06	21.01	33	SF	3	C		24		F	3781
PALE	23	1811	1811	1815	N11	W71		06	18.41	4	SF	3	C		21			3776
PALE	23	1811	1812	1829	N15	E02		06	23.91	18	SF	3	C		53			3782
HOLL	23	1839	1843	2050	N15	W35		06	21.13	131	SN	3	C		117		K	3781
HOLL	23	1839	1909	2050	N15	W35		06	21.13	131	1B	3	C		315		K	3781
PALE	23	1840	1842	2057D	N16	W37		06	20.97	137D	1B	3	C		232		F	3781
HOLL	23	1859	1903	1909	N14	W70		06	18.50	10	SF	3	C		22			3776
HOLL	23	2333	2336	0106D	N15	W38		06	21.10	93D	1B	3	C		363			3781
PEKG	23	2348	2349	0042	N19	W38		06	21.09	54	1N		P	2349	210	2.9	FT	
LEAR	24	0207	0207	0224	N17	W76		06	18.31	17	SN	3	C					3776
PEKG	24	0210	0213	0214	N18	W79		06	18.07	4	SN		P	0213	21		E	
PEKG	24	0235	0240	0245	N14	W37		06	21.31	10	SF		P	0240	13	.2	D	
PEKG	24	0310	0317	0331	N17	W37		06	21.32	21	SF		P	0317	29	.4	D	
PEKG	24	0410	0416	0425	N12	W50		06	20.40	15	1B		C	0416	189	3.1	E	
LEAR	24	0412	0415	0437	N09	W50		06	20.42	25	1B	3	C		220		FE	3781
PEKG	24	0415	0417	0425	N19	W43		06	20.89	10	SN		C	0417	88	1.3	D	
YUNN	24	0415E	0417	0420	N11	W51		06	20.34	5D	1N		P		129	2.1	F	
LEAR	24	0445	0445	0452	N11	W81		06	18.10	7	SF	3	C					3776
LEAR	24	0516	0528	0617	N16	W40		06	21.18	61	1B	3	C		176		FE	3781
YUNN	24	0528E	0528U	0553	N18	W51		06	20.34	25D	1B		P	0528	177	2.5	F	
WEND	24	0551E		0617	N18	W44		06	20.89	26D	SN		C	0553	119	1.8	E	
LEAR	24	0746	0746	0751	N15	W42		06	21.14	5	SF	3	C		20			3781

H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
LEAR	24	0907	0911	0916	N17	W40		06	21.34	9	SF	3	C		31		3781
RAMY	24	1300	1302	1309	N18	W45		06	21.11	9	SN	3	C		81		F 3781
RAMY	24	1431	1432	1436	N19	W12		06	23.69	5	SF	3	C		24		3782
RAMY	24	1441	1453	1518	N20	W11		06	23.77	37	SN	3	C		59		F 3782
HOLL	24	1450	1457	1517	N19	W11		06	23.78	27	SF	4	C		29		3782
RAMY	24	1509	1510	1525	N17	W42		06	21.44	16	SF	3	C		27		3781
HOLL	24	1518	1528	1534	N18	W42		06	21.44	16	SF	3	C		18		3781
PALE	24	1706	1715	1724	N04	E49		06	28.38	18	SF	3	C		19		3788
PALE	24	1710	1711	1724	N25	W48		06	21.00	14	SF	3	C		16		3785
PALE	24	1717	1722	1725	N11	W82		06	18.55	8	SN	3	C		15		3776
RAMY	24	1725	1726	1732	S02	W37		06	21.96	7	SB	3	C		122		3787
PALE	24	1726	1726	1738	S04	W41		06	21.66	12	SB	3	C		108		F 3787
HOLL	24	1727	1727	1737	S03	W41		06	21.66	10	SN	4	C		114		F 3787
HOLL	24	1849	1849	1854	N15	W46		06	21.30	5	SF	3	C		20		F 3781
HOLL	24	2040E	2042U	2115	N15	W11		06	24.03	35D	SN	3	C		25		F 3782
HOLL	24	2119	2119	2140	N14	W54		06	20.80	21	SF	3	C		28		F K 3781
HOLL	24	2119	2130	2140	N14	W54		06	20.80	21	SF	3	C		17		K 3781
HOLL	24	2238	2301	2355	N16	W49		06	21.22	77	SN	3	C		104		K 3781
HOLL	24	2238	2323	2355	N16	W49		06	21.22	77	SB	3	C		137		FEK 3781
LEAR	25	0003E	0006	0046	N16	W52		06	21.06	43D	SN	3	C		51		3781
HOLL	25	0003	0010	0037	N15	W47		06	21.44	34	SN	3	C		30		3781
PURP	25	0026	0028	0038	N14	W48		06	21.39	12	SN		C	0028	98	1.5	
LEAR	25	0106	0106	0114	N22	W49		06	21.28	8	SF	3	C		17		3785
HOLL	25	0109	0109	0114	N24	W49		06	21.26	5	SF	3	C		18		3785
LEAR	25	0328	0329	0334	S01	W48		06	21.56	6	SF	3	C		35		3787
LEAR	25	0329	0331	0359	N14	W57		06	20.83	30	SF	3	C		57		3781
LEAR	25	0530	0539	0608	N15	W50		06	21.44	38	SB	3	C		142		FE 3781
MANI	25	0535E	0538U	0542D	N16	W48		06	21.59	7D	SB	1	V		90	1.4	FE
YUNN	25	0537E	0541U	0542D	N14	W51		06	21.38	5D	SN		P	0541	64	1.1	E
PURP	25	0538E	0540U	0605	N15	W52		06	21.29	27D	1B		P	0540	154	2.6	
MANI	25	0554E	0555U	0600D	N16	W49		06	21.53	6D	SB	1	V		40	.6	F
YUNN	25	0557E	0557U	0558D	N15	W51		06	21.38	1D	SN		P	0557	48	.8	E
LEAR	25	0651	0651	0659	N13	W60		06	20.75	8	SF	3	C		17		3781
WEND	25	0957	1000	1012	N14	W63		06	20.65	15	SN		C	1000	38	.9	
RAMY	25	1255	1309	1339	N15	W22		06	23.87	44	SN	3	C		149		F 3782
HOLL	25	1255	1310	1335	N17	W21		06	23.94	40	SN	3	C		154		F 3782
RAMY	25	1316	1324	1336	N14	W60		06	21.01	20	SF	3	C		41		3781
RAMY	25	1403	1403	1422	N13	W64		06	20.75	19	SF	3	C		17		3781
HOLL	25	1403	1404	1408	N14	W65		06	20.67	5	SF	3	C		16		F 3781
HOLL	25	1413	1417	1423	N14	W64		06	20.75	10	SF	3	C		20		F 3781
HOLL	25	1426	1431	1436	N15	W65		06	20.68	10	SF	3	C		14		3781
HOLL	25	1520	1520	1527	N14	W65		06	20.72	7	SF	3	C		19		F 3781
HOLL	25	1612	1657	1722	N14	W67		06	20.61	70	SN	3	C		85		F 3781
HOLL	25	1813E	1822	1835	N17	W55		06	21.58	22D	SN	3	C		31		3781
HOLL	25	1837	1841	1858	N17	W59		06	21.29	21	SN	3	C		62		3781
PALE	25	1838	1840	1852	N17	W29		06	23.57	14	SN	3	C		39		3782
HOLL	25	1838	1840	1851	N16	W25		06	23.88	13	SN	3	C		49		3782
HOLL	25	1903	1905	1915	N16	W64		06	20.94	12	SF	3	C		31		3781
HOLL	25	1941	1945	2010	N17	W56		06	21.56	29	2B	3	C		419		EH 3781
HOLL	25	2134E	2141	2251	N17	W61		06	21.26	77D	1B	3	C		302		ZU 3781
HOLL	26	0039	0048	0200D	N16	W64		06	21.17	81D	2B	3	C		496		ZU 3781
LEAR	26	0042	0047	0208	N16	W65		06	21.10	86	2B	3	C		709		3781
YUNN	26	0059E	0100U	0102D	N16	W66		06	21.03	3D	1N		P	0100	193		BHI
YUNN	26	0154	0200	0214D	N21	W62		06	21.32	20D	SN		P		80	1.8	D
LEAR	26	0204	0209	0235	N16	W26		06	24.11	31	1B	3	C		359		FE 3782
YUNN	26	0205	0208	0214D	N16	W27		06	24.04	9D	1N		P		193	2.3	F
YUNN	26	0244E	0247U	0248D	N19	W60		06	21.53	4D	SN		P	0247	32	.7	D
LEAR	26	0408	0408	0413	N13	W73		06	20.66	5	SN	3	C				3781
LEAR	26	0654	0656	0707	N16	W63		06	21.51	13	SN	3	C		44		3781
YUNN	26	0655	0700	0703	N16	W65		06	21.35	8	SN		P		32	.8	D
HOLL	26	1846	1853	1902	N17	W70		06	21.46	16	SN	3	C		70		3781
PALE	26	1853	1853	1901	N15	W72		06	21.33	8	SB	3	C				3781
HOLL	26	1908	1912	1915D	N17	W74		06	21.17	7D	2B	3	C		377		3781
PALE	26	1909	1917	2013	N15	W73		06	21.27	64	2B	3	C				FEK 3781
PALE	26	1909	1926	2013	N15	W73		06	21.27	64	2B	3	C		290		K 3781
HOLL	27	0025	0030	0037	N25	W74		06	21.28	12	SF	3	C				3785
LEAR	27	0026	0027	0033	N23	W74		06	21.31	7	SF	3	C				H 3785
LEAR	27	0133	0134	0138	N17	W79		06	21.06	5	SF	3	C				F 3781

H - ALPHA SOLAR FLARES

JUNE 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
LEAR	27	0430	0431	0444	N14	W58		06	22.80	14	SF	3	C		30			3790
YUNN	27	0547	0557	0611	N16	W60		06	22.69	24	SN		P		16	.3	D	
PALE	27	1814	1815	1826	N14	W66		06	22.77	12	SF	3	C		30		F	3790
HOLL	27	1815	1816	1820	N17	W67		06	22.66	5	SF	3	C		19		F	3790
PEKG	28	0821E	0821U	0850	S06	E04		06	28.65	29D	SN		P	0821	34	.3	D	
PALE	28	2319	2336	0052	N17	W66		06	23.95	93	2N	3	C		346			3782
HOLL	28	2329	2329	0015D	N19	W74		06	23.33	46D	1B	3	C				S	3782
LEAR	29	0250	0251	0258	N15	W68		06	23.97	8	SN	3	C		50			3782
YUNN	29	0947E	0948	0954	S13	W08		06	28.80	7D	SF		P		32	.3	E	
RAMY	30	1147E	1148	1158	N05	W25		06	28.62	11D	SF	3	C		64			3788
HOLL	30	1448	1450	1505	N07	W26		06	28.67	17	SF	3	C		65		F	3788
PALE	30	2236	2240	2246	S13	W03		06	30.72	10	SN	3	C		26			3792

"REMARKS":

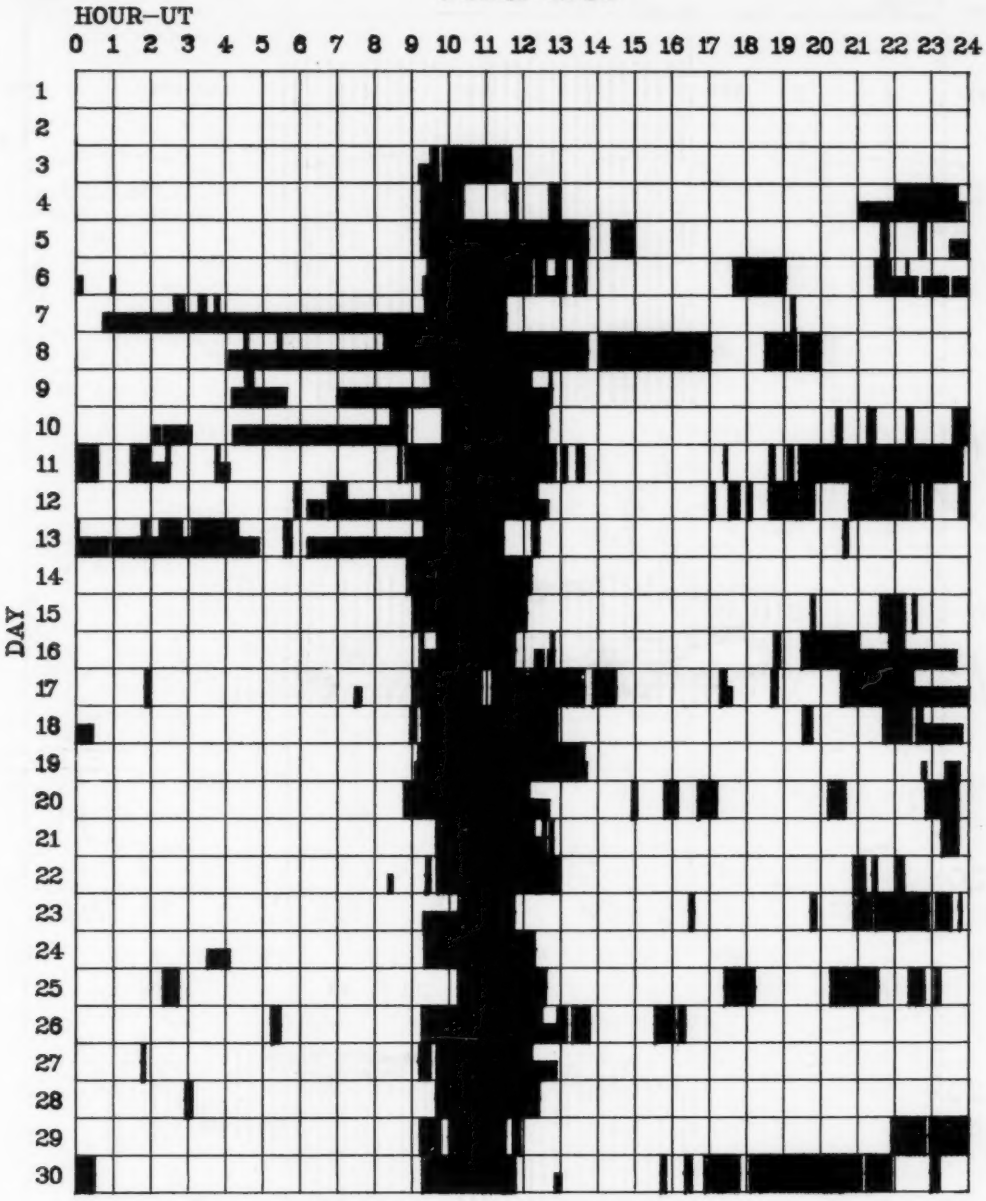
A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JUNE 1982



Observatories included in total patrol:

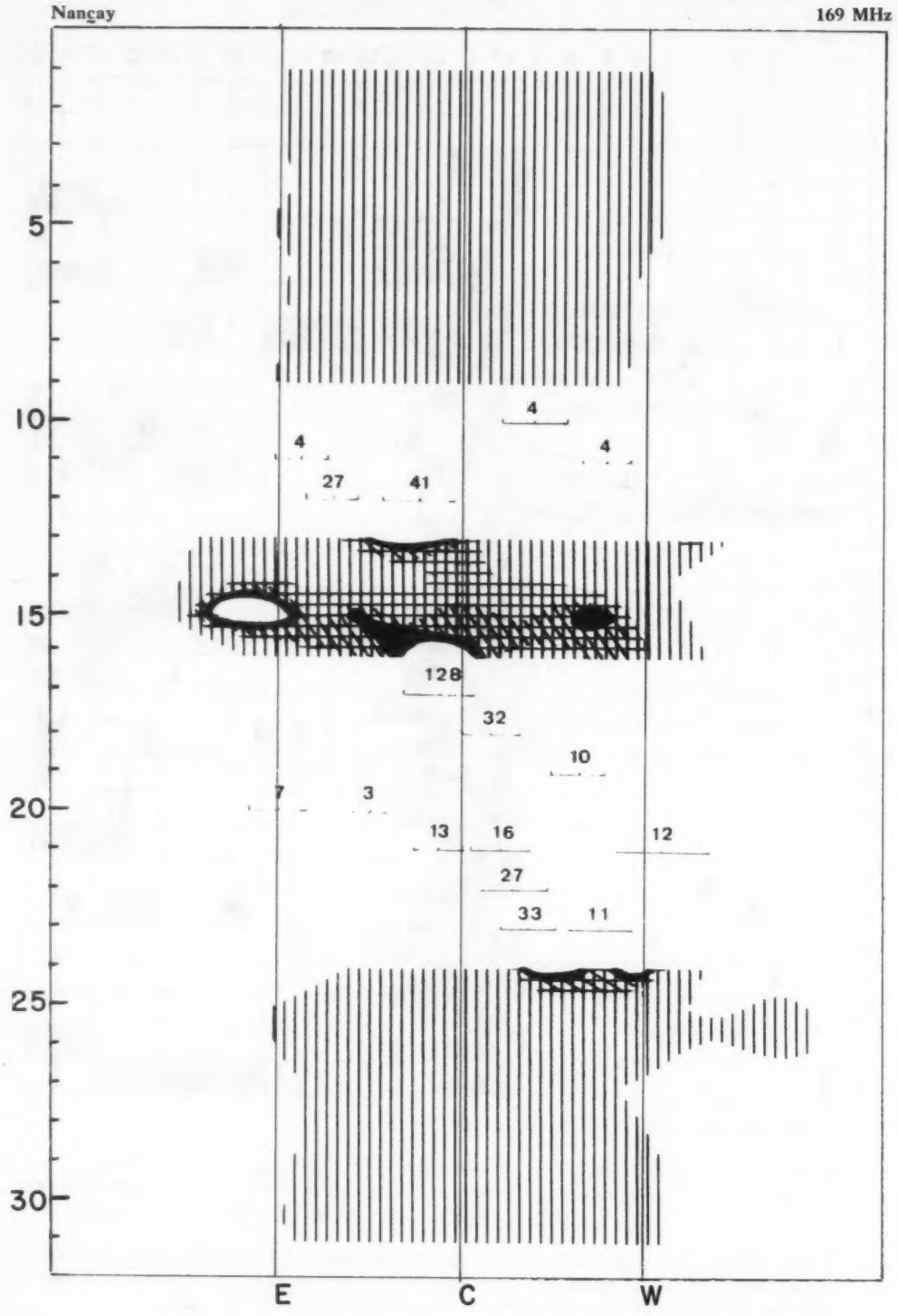
Bern	Holloman	Learmonth	Palehua	Ramey
Bucharest	Istanbul	Manila	Peking	Wendelstein
			Purple Mt.	Yunnan

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

30
un 82

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

JUNE 1982

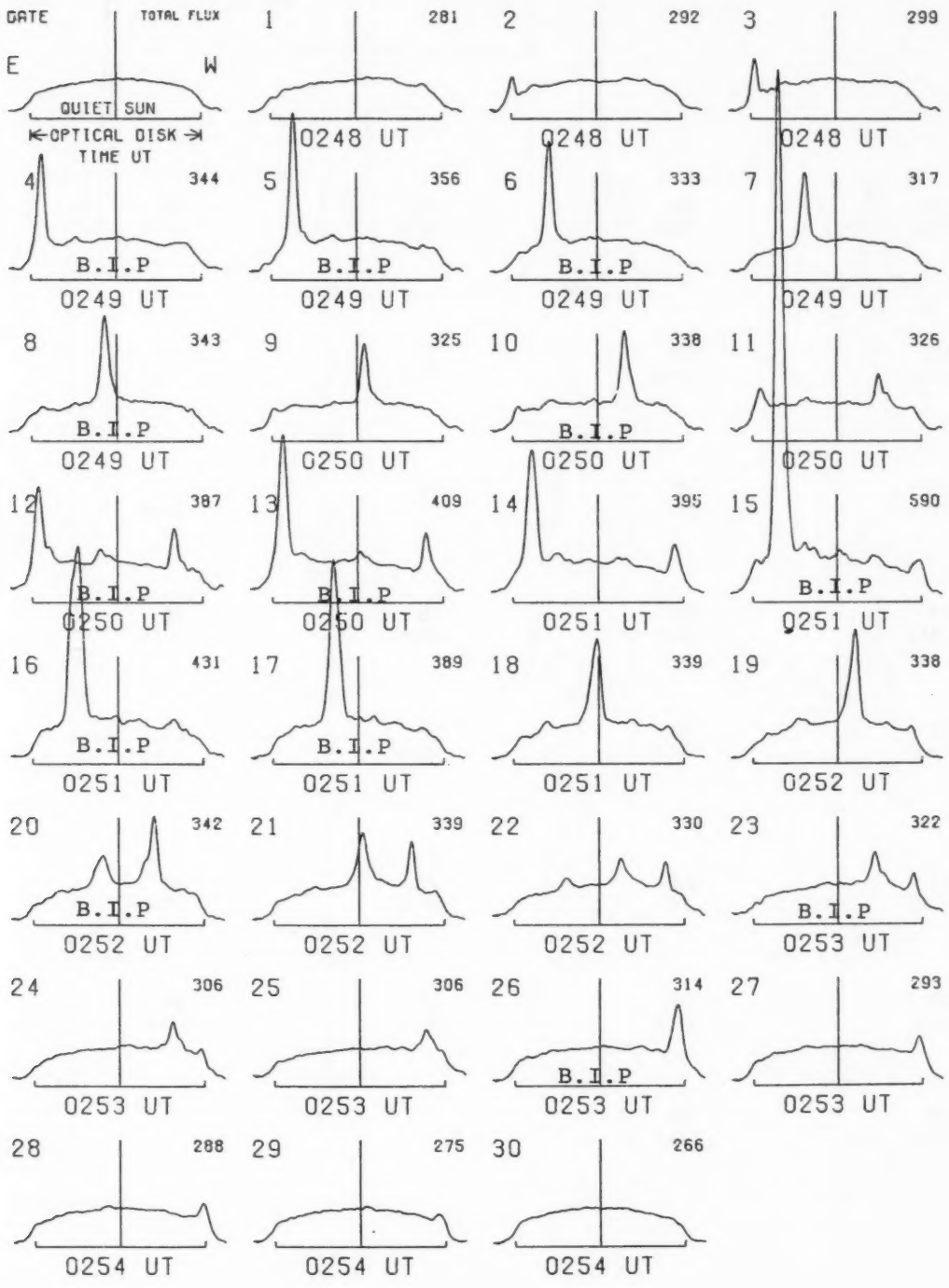


EAST-WEST SOLAR SCANS

JUNE 1982

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

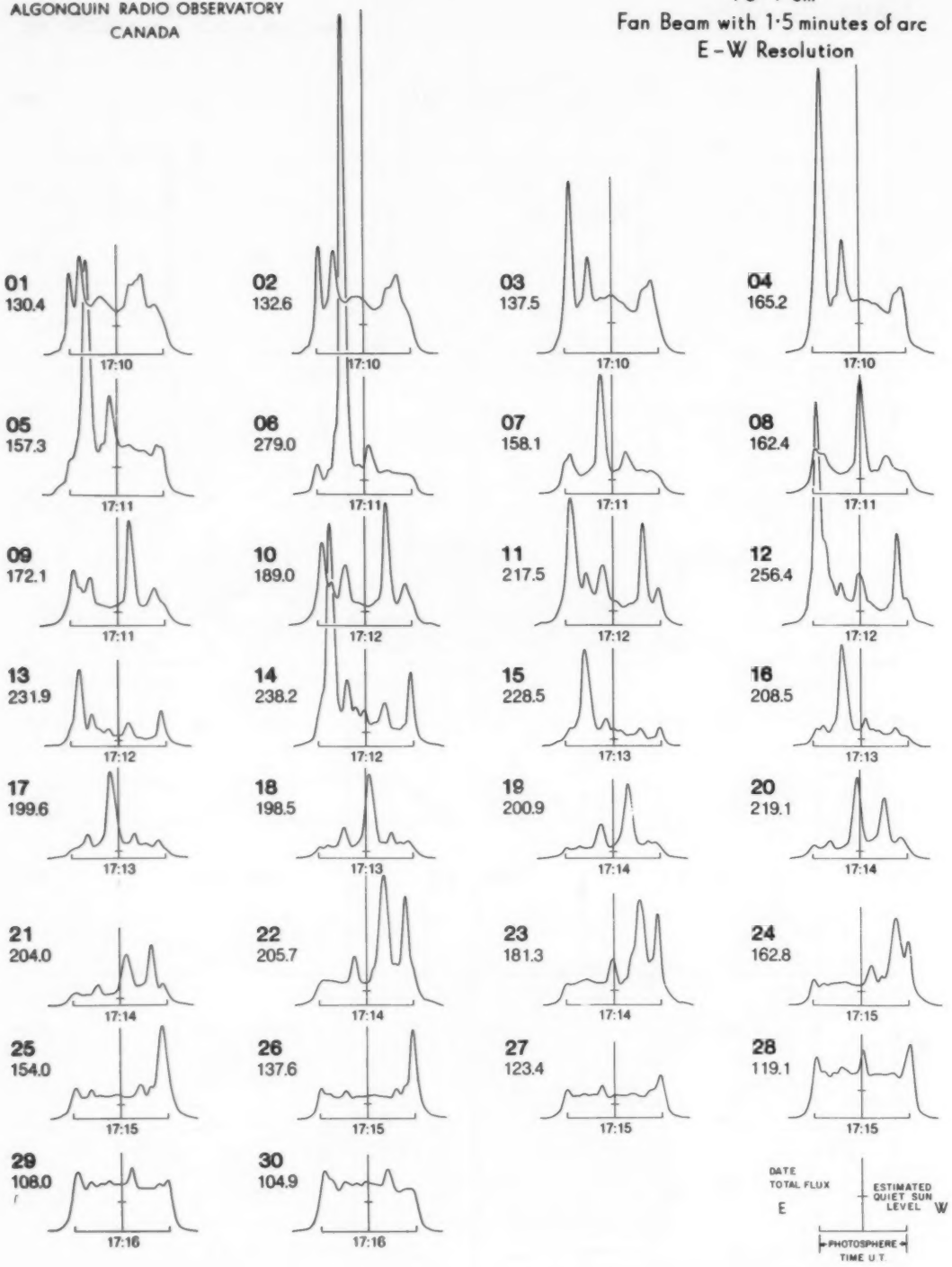


EAST-WEST SOLAR SCANS

JUNE 1982

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

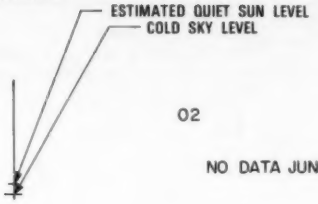


EAST-WEST SOLAR SCANS

JUNE 1982

Fleurs, Australia

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



01 02 03 04

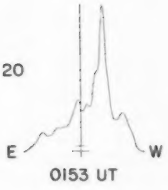
NO DATA JUNE 1-19, 22, 25-30

05 06 07 08

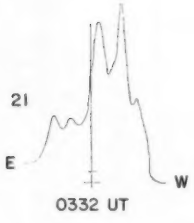
09 10 11 12

13 14 15 16

17 18 19 20

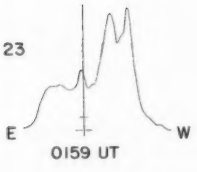


21

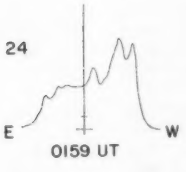


22

23



24



25 26 27 28

29 30

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2695	MANI	20	GRF	0658.2	0659.6	10.8	28.0	9.3		
	2800	OTTA	240	R	1620.0	1640.0	20.0	2.2	1.1		
	2800	OTTA	21	GRF	1720.0	1810.0	140.0	9.8	4.4		
	2800	OTTA	8	S	1726.3	1726.5	.7	.4			
	2800	OTTA	20	GRF	1950.0	2005.0	70.0	2.8	1.4		
02	2800	OTTA	28	PRE	1540.0		3.5	2.6	1.8		
	2800	OTTA	3	S	1543.5	1546.0	11.5	251.0	58.0		
	2800	OTTA	30	PBI	1555.0	1555.0	40.0	9.4	2.4		
	2800	OTTA	1	S	1625.0	1626.0	3.0	1.6	1.1		
	2800	OTTA	1	S	1643.2	1643.6	1.0	4.8	2.4		
	2800	OTTA	1	S	1853.8	1854.0	2.5	1.6	1.0		
	2800	OTTA	1	S	1859.0	1859.3	4.0	2.4	1.2		
	2695	PENT	1	S	2005.5	2006.5	4.0	2.4	2.0		
┌	2800	OTTA	4	S/F	2255.0	2256.0	10.0	87.0	16.4		
├	2695	MANI	3	S	2255.1	2256.5	4.9	78.4	26.1		
└	8800	MANI	3	S	2255.6	2256.5	1.6	70.1	23.4		
03	8800	MANI	3	S	0327.5	0327.7	1.5	90.4	30.1		
	8800	MANI	3	S	0448.8	0449.8	3.2	180.8	60.3		
	2695	MANI	1	S	0449.0	0450.7	2.5	6.2	2.1		
┌	2695	MANI	46	C	0830.0	0837.8	11.5	77.4	25.8		
├	8800	MANI	46	C	0830.0	0839.5	15.0	343.2	114.4		
├	8800	LEAR	47	GB	0831.5	0833.8	10.8	79.0			QL=6 ST=3 TYP=5
├	8400	BERN	45	C	0832.0	0839.5	28.0	300.0			
└	2695	LEAR	47	GB	0832.3	0833.5	8.8	20.0			QL=6 ST=3 TYP=5
	8800	LEAR	8	S	0848.1	0848.3	.2	11.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	1125.6	1126.0	2.9	32.0			QL=6 ST=2 TYP=3
┌	2800	OTTA	47	GB	1141.0	1143.5	29.0	2245.0	239.0		
├	8800	SGMR	49	GB	1141.1	1143.3	30.4	6000.0			QL=6 ST=2 TYP=7
├	2695	SGMR	49	GB	1142.0	1143.3	27.3	2699.0			QL=6 ST=2 TYP=7
└	8400	BERN	47	GB	1142.0	1145.8U	36.0	3790.0D			
	2800	OTTA	29	PBI	1210.0	1210.0	15.0	10.6	2.7		
	2800	OTTA	21	GRF	1500.0	1518.0	50.0	2.6			
┌	8400	BERN	4	S/F	1505.5	1509.8	7.0D	159.0			
├	2800	OTTA	4	S/F	1505.5	1510.0	11.0	45.0	16.4		
├	2695	SGMR	47	GB	1506.3	1508.6	6.8	39.0			QL=6 ST=3 TYP=5
└	8800	SGMR	47	GB	1507.1	1508.6	6.4	56.0			QL=6 ST=3 TYP=5
	2800	OTTA	1	S	1532.0	1538.5	9.0	4.6	2.3		
	2800	OTTA	240	R	1820.0	1955.0	95.0	12.0	6.0		
	8800	PALE	8	S	1855.1	1855.6	1.0	22.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	1919.0	1921.1	2.1	58.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1928.1	1929.8	1.7	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	2000.0	2030.0	100.0	4.0	2.0		
	8800	SGMR	8	S	2002.1	2002.6	.5	21.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2101.3	2101.8	.8	36.0			QL=6 ST=2 TYP=3
┌	8800	PALE	47	GB	2128.1	2128.5	1.2	100.0			QL=6 ST=2 TYP=5
└	8800	SGMR	47	GB	2128.3	2128.5	.8	58.0			QL=6 ST=2 TYP=5
	2695	PENT	240	R	2235.0	2300.0	25.0	3.0	1.5		
04	2695	PENT	21	GRF	0010.0	0110.0	100.0D	13.8			
	2695	PENT	45	C	0011.0	0016.9	7.0	8.2	3.0		
┌	2695	PENT	40	F	0014.0	0032.0	24.0	148.0			
├	8800	MANI	4	S/F	0029.3	0032.2	4.7	266.9	88.9		
└	2695	MANI	4	S/F	0029.5	0033.0	4.9	201.5	67.2		
	2695	PENT	1	S	0106.0	0108.0	9.0	9.2	4.0		
	8800	MANI	3	S	0257.0	0259.0	5.0	175.2	58.4		
┌	8400	BERN	45	C	0501.0	0512.4	15.0	334.0U			
└	8800	MANI	46	C	0502.8	0513.1	13.2	379.6	126.5		
	2695	MANI	46	C	0503.0	0507.7	14.0	52.4	17.5		
┌	8400	BERN	3	S	0543.0	0546.2	11.0	78.0			
├	2695	MANI	4	S/F	0544.0	0547.0	7.0	24.8	8.3		
└	8800	MANI	4	S/F	0544.5	0547.0	8.5	116.8	38.9		
┌	8800	MANI	4	S/F	0627.5	0628.7	2.2	163.5	54.5		
└	2695	MANI	4	S/F	0627.5	0628.8	3.5	37.3	12.4		
	8400	BERN	4	S/F	0631.0	0632.1	3.0	154.0			
	8400	BERN	47	GB	0902.0	1033.7	180.0D	703.0			
	2800	OTTA	28	PRE	1312.5	1313.0	11.5	8.0			
┌	8400	BERN	47	GB	1312.5	1328.4	51.0	2366.0			
└	2800	OTTA	47	GB	1324.0	1328.5	23.0	595.0	113.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
04	2800	OTTA	30	PBI	1347.0	1347.0	253.0	18.4			
	2800	OTTA	3	S	1351.0	1351.8	3.0	63.0	20.0		
	2800	OTTA	4	S/F	1419.0	1421.5	17.0	405.0	71.0		
	8400	BERN	47	GB	1419.4	1420.8	15.0	1363.0			
	2800	OTTA	29	PBI	1436.0	1436.0	50.0	4.6	2.3		
	2800	OTTA	1	S	1540.5	1541.5	1.5	3.0	1.5		
	2800	OTTA	3	S	1549.0	1550.2	5.0	11.6	4.0		
	2800	OTTA	4	S/F	1651.2	1651.2	5.8	180.0	45.0		
	8400	BERN	4	S/F	1651.4	1652.8	8.0D	374.0			
	2800	OTTA	30	PBI	1657.0	1657.0	60.0	11.4	6.4		
	2800	OTTA	40	F	1740.0	1742.2	2.5	19.4			
	2800	OTTA	32A	ABS	1802.0	1935.0	140.0	-9.0	-5.0		
	2800	OTTA	46F	C	1913.5	1917.8	17.0	290.0	27.0		
	2800	OTTA	23	GRF	2024.0		120.0	6.2			
	2800	OTTA	2	S/F	2025.0	2026.0	1.8	9.0	4.5		
	2800	OTTA	1	S	2028.7	2029.5	3.3	6.0	3.0		
	2800	OTTA	3	S	2116.0	2116.7	3.0	15.4	5.1		
	2800	OTTA	40	F	2144.5	2145.2	2.5	152.0			
	2800	OTTA	21	GRF	2230.0	2305.0	120.0	4.6	2.0		
	2800	OTTA	1	S	2244.0	2244.5	2.0	3.0	1.5		
05	8800	MANI	3	S	0125.1	0129.5	6.9	343.2	114.4		
	2695	PENT	4	S/F	0128.5	0128.8	2.0	15.2	4.0		
	2695	MANI	3	S	0128.9	0129.4	1.0	28.9	9.6		
	2695	MANI	3	S	0249.0	0250.7	3.5	28.7	9.5		
	8800	MANI	3	S	0249.1	0250.5	2.9	48.4	16.1		
	8800	MANI	23	GRF	0413.0	0417.3	8.0	62.9	21.0		
	2695	MANI	4	S/F	0413.8	0417.3	4.2	15.1	5.0		
	8400	BERN	47	GB	0614.0	0616.1	4.0D	1417.0			
	8800	LEAR	49	GB	0614.1	0616.1	18.0	1300.0			QL=6 ST=2 TYP=6
	8800	MANI	47	GB	0614.7	0616.8	8.1	1742.4	580.8		
	2695	LEAR	47	GB	0615.6	0615.8	3.5	310.0			QL=6 ST=2 TYP=5
	2695	MANI	4	S/F	0616.0	0616.3	7.0	354.9	118.3		
	2695	MANI	4	S/F	0727.1	0728.5	4.9	214.4	71.5		
	8800	MANI	47	GB	0727.5	0728.5	5.5	1321.3	440.4		
	2800	OTTA	23	GRF	1130.0		90.0	3.0	2.3		
	2800	OTTA	8	S	1151.2	1151.4	.8	3.0	1.5		
	2800	OTTA	4	S/F	1205.7	1206.0	1.0	42.0			
	2800	OTTA	8	S	1325.8	1325.8	.1	4.4			
	2800	OTTA	23	GRF	1355.0	1530.0	325.0	14.8			
	8400	BERN	46	C	1400.0U	1514.0	180.0D	95.0			
	2800	OTTA	8	S	1449.0	1449.5	.8	2.4	1.2		
	2800	OTTA	45	C	1457.3	1457.7	2.0	11.0	4.0		
	2800	OTTA	46F	C	1511.5	1513.1	3.0	12.6	4.8		
	2800	OTTA	1	S	1528.0	1528.5	1.0	7.4	3.4		
	2800	OTTA	1	S	1531.6	1531.9	1.0	4.8	2.4		
	2800	OTTA	46F	C	1729.0	1739.7	17.0	64.0	15.2		
	2695	SGMR	47	GB	1738.6	1740.3	3.0	50.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1740.3	1740.5	2.0	64.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1753.8	1755.1	1.5	78.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1819.6	1819.8	.2	62.0			QL=5 ST=2 TYP=5
	8800	PALE	47	GB	1827.6	1827.8	.4	93.0			QL=5 ST=2 TYP=5
	8800	PALE	49	GB	1911.8	1912.3	.8	2000.0			QL=5 ST=2 TYP=6
	2800	OTTA	3	S	1949.8	1950.0	2.5	12.0	4.0		
	2695	PALE	8	S	1949.8	1950.1	1.0	13.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	2001.1	2002.6	2.4	17.0			QL=6 ST=2 TYP=3
	8800	PALE	4	S/F	2002.5	2002.8	5.6	38.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	2110.0	2110.3	1.0	9.6	4.8		
	2800	OTTA	1	S	2113.0	2113.5	2.0	3.0	1.4		
	2695	MANI	4	S/F	2317.0	2320.1	8.7	85.6	28.5		
	2695	SGMR	47	GB	2318.3	2319.1	2.2	55.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	2318.5	2319.0	2.8	95.0			QL=5 ST=2 TYP=5
	2695	PALE	47	GB	2318.6	2318.8	.7	93.0			QL=6 ST=2 TYP=5
06	8800	LEAR	4	S/F	0307.1	0308.8	8.5	19.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0351.0	0351.3	1.0	41.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0352.3	0352.9	3.2	52.7	17.6		
	8800	LEAR	4	S/F	0504.5	0508.5	5.6	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0516.0	0517.0	5.3	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0522.0	0529.1	11.0	13.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
06	8400	BERN	41	F	0636.0	0637.4	18.0	48.0			
	8800	LEAR	4	S/F	0636.3	0637.5	4.7	36.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0636.6	0638.0	2.7	21.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0650.8	0651.5	2.2	20.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0911.6	0912.6	12.2	15.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	1048.3	1049.3	7.8	30.0			QL=3 ST=2 TYP=3
	2800	OTTA	2	S/F	1051.6	1052.2	9.0	9.0	3.0		
	2800	OTTA	1	S	1104.2	1105.0	3.0	2.4	1.2		
	2800	OTTA	23	GRF	1210.0	1435.0	220.0	16.4	5.5		
	8800	SGMR	4	S/F	1248.5	1250.3	5.6	29.0			QL=3 ST=2 TYP=3
	8400	BERN	41	F	1325.0U	1429.4	115.0U	122.0			
	8800	SGMR	4	S/F	1325.8	1326.3	9.5	44.0			QL=3 ST=2 TYP=3
	8800	ATHN	4	S/F	1325.8	1326.6	5.8	28.0			QL=6 ST=3 TYP=3
	2800	OTTA	1	S	1326.0	1326.3	2.0	3.0	1.5		
	8800	SGMR	47	GB	1420.5	1422.6	17.1	91.0			QL=3 ST=2 TYP=5
	2800	OTTA	4	S/F	1421.0	1424.0	15.0	27.0	12.0		
	2695	ATHN	4	S/F	1421.8	1424.5	16.0	21.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1421.8	1429.8	21.2	80.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1422.3	1424.1	15.3	32.0			QL=3 ST=2 TYP=3
	8800	ATHN	49	GB	1629.0	1632.6	67.6	2300.0			QL=6 ST=2 TYP=6
	2695	ATHN	49	GB	1629.0	1635.1	67.6	3500.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1629.8	1634.0	12.0	3399.0			QL=6 ST=2 TYP=7
	2800	OTTA	47	GB	1630.0	1634.5	180.0	2815.0			
	8400	BERN	47	GB	1630.5	1637.8U	14.0D	2561.0D			
	2695	SGMR	49	GB	1630.8	1634.1	11.0	3300.0			QL=6 ST=2 TYP=7
	8800	SGMR	47	GB	1653.3	1655.3	17.7	110.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1654.5	1655.3	16.5	110.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1711.0	1711.3	10.8	69.0			QL=6 ST=2 TYP=5
	8800	SGMR	4	S/F	1711.3	1711.3	10.5	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	47	GB	1725.3	1725.6	9.7	130.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1746.3	1746.5	16.3	62.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1755.6	1802.6	7.0	280.0			QL=6 ST=2 TYP=5
	8800	SGMR	49	GB	1802.6	1804.8	12.2	470.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	1802.6	1804.8	12.2	1100.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	1814.8	1815.0	9.8	1800.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1814.8	1815.0	9.8	770.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	1824.6	1824.8	11.4	1000.0			QL=6 ST=2 TYP=6
	8800	SGMR	47	GB	1824.6	1825.0	11.4	370.0			QL=6 ST=2 TYP=5
	2695	SGMR	49	GB	1836.0	1836.1	71.8	640.0			QL=6 ST=2 TYP=6
	8800	SGMR	47	GB	1836.0	1836.1	33.5	210.0			QL=6 ST=2 TYP=5
	2800	OTTA	29	PBI	1930.0	1930.0	90.0	26.0	8.6		
	2800	OTTA	20	GRF	2235.0	2242.0	19.0	4.2	2.4		
	2800	OTTA	1A	S	2236.0	2237.3	2.0	2.4	1.2		
	2695	SGMR	20	GRF	2307.0	2308.3	3.6	20.0			QL=6 ST=2 TYP=2
07	8800	PALE	8	S	0112.1	0112.5	2.0	21.0			QL=6 ST=3 TYP=3
	8400	BERN	41	F	0824.0	0826.9	50.0	464.0			
	8800	ATHN	47	GB	0824.0	0826.5	10.1	320.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	0824.3	0826.5	4.7	280.0			QL=6 ST=2 TYP=5
	2695	MANI	4	S/F	0824.6	0827.0	5.4	225.5	75.2		
	8800	MANI	47	GB	0824.6	0827.0	5.9	579.1	193.0		
	8800	LEAR	47	GB	0824.8	0827.0	17.3	400.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0825.6	0826.8	15.0	230.0			QL=6 ST=2 TYP=5
	2695	MANI	4	S/F	0838.7	0838.9	4.3	37.8	12.6		
	8800	MANI	4	S/F	0839.0	0840.3	4.5	135.4	45.1		
	2695	ATHN	4	S/F	0928.0	0928.6	2.5	24.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0928.0	0928.6	3.3	21.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1011.3	1011.8	3.7	11.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1140.0	1141.1	2.0	50.0			
	8800	ATHN	4	S/F	1140.1	1140.8	6.2	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1140.8	1141.0	1.0	4.8			
	2800	OTTA	20	GRF	1235.0	1312.0	205.0	18.4	6.6		
	8400	BERN	20	GRF	1240.0	1344.6	130.0	139.0			
	8800	ATHN	47	GB	1300.3	1307.3	54.3	31.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1606.8	1607.1	4.0	123.0			
	2800	OTTA	21	GRF	1635.0	1650.0	70.0	5.0	2.3		
	8800	ATHN	4	S/F	1643.6	1646.1	12.7	31.0			QL=5 ST=2 TYP=3
	8400	BERN	21	GRF	1644.0	1653.1	45.0	56.0			
	2800	OTTA	1	S	1645.0	1646.0	3.0	6.4	2.2		
	2800	OTTA	1	S	1700.0	1701.0	2.0	3.6	1.8		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
07	2800	OTTA	1	S	1732.0	1733.0	3.0	8.0	3.6		
	8800	PALE	47	GB	1808.8	1809.1	.8	63.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	2114.0	2138.0	135.0	6.0	3.0		
	2800	OTTA	45	C	2117.5	2119.1	10.5	19.4	5.8		
	2695	PALE	8	S	2118.5	2119.6	1.3	20.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	2118.8	2119.6	3.8	24.0			QL=6 ST=2 TYP=5
08	2695	PENT	20	GRF	0120.0	0145.0	30.0D	9.6			
	2695	MANI	3	S	0259.0	0301.2	5.5	138.8	46.3		
	2695	PALE	47	GB	0300.1	0300.6	2.2	119.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0300.1	0300.6	2.2	130.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0300.1	0300.6	1.2	139.0			QL=3 ST=2 TYP=5
	8800	MANI	3	S	0300.2	0301.2	2.3	148.8	49.6		
	8800	PALE	47	GB	0300.5	0300.6	.3	200.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0427.1	0427.6	4.9	40.0			QL=3 ST=2 TYP=3
	8400	BERN	3	S	0540.0	0550.9	15.0	86.0			
	2695	LEAR	4	S/F	0549.8	0550.8	6.8	19.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0550.0	0551.0	2.5	15.6	5.2		
	8800	LEAR	47	GB	0550.1	0550.8	2.5	69.0			QL=6 ST=2 TYP=5
	2695	ATHN	8	S	0550.1	0551.0	2.0	6.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0550.1	0551.0	3.0	68.0			QL=6 ST=2 TYP=5
	8800	MANI	3	S	0550.2	0551.0	1.8	80.8	26.9		
	2695	SGMR	4	S/F	1212.8	1214.3	3.0	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1213.8	1214.3	.8	30.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1214.0	1214.4	1.0	82.0			
	8800	ATHN	8	S	1214.0	1214.5	2.0	11.0			QL=5 ST=2 TYP=3
	2695	ATHN	8	S	1214.0	1214.5	2.0	9.0			QL=5 ST=2 TYP=3
	2800	OTTA	1	S	1214.0	1214.6	1.5	9.8	4.8		
	2800	OTTA	20	GRF	1445.0	1453.0	15.0	4.0	1.8		
	2800	OTTA	20	GRF	1530.0	1555.0	80.0	44.0	14.8		
	2695	SGMR	20	GRF	1544.6	1547.8	23.4D	31.0			QL=6 ST=3 TYP=2
	2800	OTTA	3	S	1801.0	1802.3	3.0	68.0	023.0		
	2695	SGMR	47	GB	1801.5	1802.3	2.6	60.0			QL=6 ST=2 TYP=5
	8800	PALE	8	S	1802.0	1802.3	.8	30.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1802.0	1802.5	1.8	25.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	1802.1	1802.3	.4	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1804.0	1804.0	22.0	5.0	2.7		
	2800	OTTA	31	ABS	1826.0	1835.0	30.0	-6.6	-3.3		
	2695	PALE	47	GB	1958.8	2000.3	5.2	16.0			QL=6 ST=2 TYP=5
	2800	OTTA	28	PRE	1959.0	2000.9	2.2	11.8			
	2695	SGMR	47	GB	2000.0	2002.1	4.3	119.0			QL=6 ST=2 TYP=5
	2695	PENT	4	S/F	2001.2	2002.2	3.8	133.0	44.0		
	8800	SGMR	47	GB	2001.8	2002.1	2.2	119.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2001.8	2002.1	1.5	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	30	PBI	2005.0	2005.0	135.0	6.6	2.8		
	2695	PENT	3	S	2007.0	2009.2	6.5	30.0	7.8		
	2695	PALE	4	S/F	2007.5	2009.1	2.8	33.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	2058.0	2058.3	1.5	6.0	3.0		
	2695	PENT	21	GRF	2335.0	2343.0	55.0	7.8	2.6		
	2695	PENT	2	S/F	2337.0	2339.0	2.0	6.0	4.5		
	8800	LEAR	4	S/F	2342.1	2342.1	2.2	32.0			QL=3 ST=2 TYP=3
	2695	PENT	8	S	2342.4	2342.4	.1	5.0			
	8800	PALE	4	S/F	2344.6	2344.6	4.9	40.0			QL=6 ST=2 TYP=3
09	2695	PENT	45	C	0038.0	0038.2	7.0	18.0	4.5		
	8800	MANI	3	S	0321.3	0322.2	1.9	53.5	17.8		
	8400	BERN	21	GRF	0724.0	0727.0	90.0	73.0			
	2695	MANI	4	S/F	0724.4	0726.0	5.4	54.0	16.2		
	8800	MANI	4	S/F	0724.4	0726.3	4.6	44.6	14.9		
	8400	BERN	3	S	0956.5	0956.9	4.0	44.0			
	8800	ATHN	49	GB	1123.3	1126.3	26.7	680.0			QL=6 ST=2 TYP=6
	2695	ATHN	47	GB	1124.0	1126.5	26.0	320.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1124.5	1128.0	13.5	307.0	92.0		
	8400	BERN	47	GB	1124.7	1127.2	6.0D	926.0			
	8800	SGMR	49	GB	1125.6	1126.8	15.5	710.0			QL=6 ST=2 TYP=6
	2695	SGMR	47	GB	1125.6	1127.3	14.2	310.0			QL=6 ST=2 TYP=5
	2800	OTTA	30	PBI	1138.0	1138.0	100.0	16.2	5.4		
	8800	ATHN	4	S/F	1211.5	1214.0	9.6	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1213.0	1215.0	5.0	20.0	9.6		
	2695	SGMR	47	GB	1213.1	1215.0	28.7	32.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
09	8800	SGMR	4	S/F	1213.3	1213.8	2.7	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1229.5	1231.6	7.5	48.0	20.3		
	8800	PALE	8	S	1836.6	1836.8	.4	26.0			QL=5 ST=2 TYP=3
	2800	OTTA	20	GRF	1920.0	1934.0	120.0	4.8	1.6		
	2800	OTTA	21	GRF	2217.0	0022.0	210.0D	36.0			
	2800	OTTA	1	S	2218.0	2218.5	1.8	6.0	2.0		
	8800	SGMR	47	GB	2220.8	2224.1	10.8	230.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	2220.9	2221.0	1.0	5.4	2.7		
	8800	MANI	4	S/F	2221.0	2224.3	7.0	397.8	136.2		
	8800	PALE	47	GB	2222.5	2224.1	2.6	280.0			QL=5 ST=2 TYP=5
	2695	MANI	4	S/F	2222.5	2224.2	2.6	69.9	23.3		
	2800	OTTA	4	S/F	2222.9	2224.0	2.2	40.0	20.0		
	2695	SGMR	47	GB	2223.0	2224.0	1.5	63.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	2223.1	2224.0	2.0	72.0			QL=5 ST=2 TYP=5
	2695	PENT	3	S	2224.8	2225.0	3.0	81.0	14.0		
	8800	SGMR	47	GB	2235.5	2235.8	.5	61.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	2235.5	2235.9	1.5	28.0	9.4		
	2695	SGMR	8	S	2235.6	2235.8	.5	33.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2235.8	2236.0	1.2	26.0			QL=5 ST=2 TYP=3
	8800	PALE	47	GB	2235.8	2236.0	1.2	70.0			QL=5 ST=2 TYP=5
	2800	OTTA	3	S	2252.0	2257.0	12.0	13.8	5.7		
	2695	SGMR	8	S	2324.8	2324.8	1.3	35.0			QL=4 ST=2 TYP=3
	8800	LEAR	47	GB	2325.0	2325.1	22.0	94.0			QL=3 ST=3 TYP=5
	2695	LEAR	47	GB	2325.0	2325.1	68.0	68.0			QL=3 ST=3 TYP=5
	8800	MANI	3	S	2325.0	2325.2	1.5	107.6	35.9		
	2695	MANI	3	S	2325.0	2325.2	1.5	92.0	30.6		
	8800	LEAR	4	S/F	2337.3	2337.3	220.0	41.0			QL=3 ST=3 TYP=3
	2695	LEAR	8	S	2337.3	2337.5	.2	20.0			QL=3 ST=3 TYP=3
10	8800	LEAR	49	GB	0057.0	0059.0	11.1	1000.0			QL=6 ST=2 TYP=6
	8800	PALE	49	GB	0057.6	0059.0	11.4	1000.0			QL=6 ST=2 TYP=6
	2695	LEAR	8	S	0057.8	0058.1	.3	18.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0057.8	0058.1	.3	13.0			QL=6 ST=2 TYP=3
	2695	MANI	4	S/F	0058.0	0058.2	2.3	33.1	11.0		
	8800	MANI	47	GB	0058.0	0059.2	3.0	1174.7	391.6		
	8800	LEAR	8	S	0213.8	0214.8	2.0	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0247.6	0249.8	5.0	5.0			QL=6 ST=2 TYP=2
	2695	MANI	3	S	0248.5	0249.5	3.3	11.2	3.7		
	2695	LEAR	20	GRF	0249.0	0249.3	.3	7.0			QL=6 ST=2 TYP=2
	8800	LEAR	8	S	0427.3	0427.5	.2	23.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0427.3	0427.6	.7	5.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0429.4	0429.8	1.2	14.9	5.0		
	8800	LEAR	8	S	0505.0	0505.3	.8	10.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0541.6	0543.0	6.9	58.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0551.1	0552.3	4.0	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0603.1	0604.0	4.2	36.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0609.8	0611.1	5.0	6.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0609.8	0611.1	5.7	30.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0610.1	0612.3	7.0	35.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1135.0	1148.0	40.0	10.4	5.2		
	2800	OTTA	3	S	1141.0	1142.9	5.0	66.0	22.0		
	8800	ATHN	47	GB	1141.3	1142.6	6.8	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1141.5	1142.6	6.6	52.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1142.0	1142.8	2.6	59.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1142.0	1143.0	20.0	147.0			
	8800	SGMR	47	GB	1142.1	1142.8	2.5	130.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1201.3	1204.0	4.0	18.0			QL=6 ST=2 TYP=3
	8400	BERN	41	F	1202.0	1204.4	6.0	118.0			
	2800	OTTA	45	C	1202.2	1203.5	4.0	14.4	5.0		
	8800	ATHN	47	GB	1203.1	1204.5	3.4	65.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1203.1	1204.5	1.5	94.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1203.3	1203.3	.2	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	1544.1	1544.5	1.2	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	AR	1615.0	1710.0	55.0	6.6	3.3		
	2800	OTTA	20	GRF	1657.0	1701.0	12.0	5.0	2.5		
	2800	OTTA	21	GRF	1755.0	2125.0	465.0	41.0	19.7		
	2695	SGMR	8	S	1759.5	1800.0	.5D	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F	C	1829.5	1838.5	12.0	23.6	11.8		
	2695	SGMR	4	S/F	1830.1	1830.3	10.4	29.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1830.1	1830.3	10.4	110.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
10	8800	PALE	47	GB	1830.1	1830.3	2.0	119.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	1830.1	1830.3	4.0	22.0			QL=6 ST=2 TYP=3
	2695	PALE	20	GRF	1834.1	1834.3	.2	13.0			QL=6 ST=2 TYP=2
	8800	PALE	8	S	1834.6	1834.8	.2	13.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	1848.8	1849.8	1.0D	13.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	1849.5	1849.8	2.8	16.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	1851.0	1852.0	2.0	3.2	1.6		
	2800	OTTA	1	S	1904.0	1907.0	6.0	4.8	2.6		
	2800	OTTA	1	S	1912.0	1914.2	8.0	8.4	4.0		
	2695	SGMR	47	GB	1925.8	1926.6	9.5	37.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1931.0	1945.0	70.0	305.0	103.0		
	2695	PALE	47	GB	1932.1	1932.3	10.0	13.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1933.8	1934.3	1.5	74.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1933.8	1938.6	8.3	78.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1939.8	1941.8	27.8	310.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1939.8	1941.8	27.8	180.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1942.1	1942.3	21.5	119.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1942.1	1943.5	21.5	280.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2007.6	2007.8	29.7	73.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	2007.6	2007.8	30.4	110.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	2156.8	2156.9	2.2	24.0	10.0		
11	2695	MANI	3	S	0224.1	0224.5	2.9	233.5	77.8		
	8800	MANI	3	S	0224.1	0224.5	1.4	88.2	29.4		
	2695	LEAR	47	GB	0224.1	0224.6	3.0	219.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	0224.1	0224.6	1.9	200.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0224.1	0224.6	1.2	87.0			QL=6 ST=2 TYP=5
	8800	LEAR	8	S	0225.3E	0225.3	1.8D	22.0			QL=5 ST=2 TYP=3
	8800	LEAR	8	S	0448.0	0448.1	1.5	16.0			QL=6 ST=2 TYP=3
	8800	MANI	3	S	0645.0	0645.4	.7	28.1	9.4		
	8800	ATHN	4	S/F	0645.1	0646.0	2.7	16.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0645.3	0645.6	2.7	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1100.0	1254.0	295.0	18.4	7.6		
	8400	BERN	4	S/F	1108.0	1109.3	9.0	120.0			
	8800	SGMR	47	GB	1109.0	1109.3	1.8	100.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1109.0	1109.5	7.0	100.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1140.8	1141.3	.5D	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1249.3	1251.6	5.8	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1346.2	1347.5	2.0	8.4	3.0		
	2695	ATHN	8	S	1347.1	1347.8	.9	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	45	C	1455.0	1458.8	10.0	80.0	26.2		
	8400	BERN	4	S/F	1456.0	1500.5	20.0	119.0			
	2695	SGMR	47	GB	1456.5	1459.1	6.5	99.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1458.3	1500.6	7.7	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1458.5	1459.1	5.8	61.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1458.5	1500.5	22.8	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	22	GRF	1617.0	1635.0	45.0	4.0	2.0		
	2800	OTTA	3	S	1718.3	1718.9	1.5	13.8	4.8		
	2695	SGMR	8	S	1718.8	1719.0	.3	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1755.0	1848.0	245.0	44.0	19.6		
	2800	OTTA	3	S	1814.0	1817.2	7.0	83.0	27.8		
	2695	SGMR	47	GB	1815.0	1817.1	11.8	92.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1815.3	1817.3	4.0	64.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1816.3	1817.1	2.5	76.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1816.6	1817.1	1.2	57.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	1839.8	1843.6	11.2	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1840.0	1842.5	4.5	9.6	6.4		
	8800	PALE	4	S/F	1841.1	1842.1	7.5	28.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1842.3	1843.1	1.3	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	2021.1	2021.3	.8	2.6	1.3		
	2800	OTTA	1	S	2027.0	2027.5	2.0	3.0	1.5		
	8800	PALE	8	S	2124.1	2124.3	.2	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	2146.7	2146.7	2.0	3.8	1.6		
	8800	MANI	4	S/F	2205.0	2206.7	3.0	52.4	17.5		
	2800	OTTA	3	S	2205.5	2206.1	5.0	21.0	7.0		
	8800	SGMR	4	S/F	2205.5	2206.1	2.3	32.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	2205.8	2206.1	2.5	22.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	2206.1	2206.7	2.2	21.4	7.1		
	2800	OTTA	40	F	2239.0	2243.0	6.0	3.8			
	8800	PALE	4	S/F	2327.3	2329.1	2.5	33.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
11	2695	PENT	1	S	2327.5	2328.0	5.0	8.4	2.8		
12	2695	PENT	1	S	0001.9	0002.0	1.0	4.6			
	2695	PENT	20	GRF	0005.0	0040.0	65.0	8.6	4.3		
	2695	PENT	8	S	0006.7	0007.1	.8	23.4	11.7		
	2695	PENT	1	S	0018.0	0019.0	3.0	5.6	2.7		
	2695	PENT	26	FAL	0040.0	0110.0	30.0	-7.0	-3.5		
	2695	MANI	3	S	0150.5	0151.0	2.0	30.4	10.1		
	8800	MANI	3	S	0150.7	0151.0	1.3	109.2	36.4		
	2695	MANI	3	S	0207.5	0209.0	3.0	12.2	4.1		
	8800	MANI	3	S	0218.1	0218.2	1.0	26.0	8.7		
	2695	MANI	3	S	0218.1	0218.2	2.9	28.9	9.6		
	8800	LEAR	8	S	0228.3	0228.6	1.3	50.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0228.3	0228.8	.7	47.0			QL=3 ST=2 TYP=3
	8800	MANI	4	S/F	0245.0	0247.7	5.5	239.2	79.7		
	2695	LEAR	47	GB	0245.5	0247.8	4.1	160.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0245.8	0247.8	3.3	300.0			QL=3 ST=2 TYP=5
	8800	LEAR	47	GB	0245.8	0247.8	3.5	300.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	0247.3	0247.8	2.0	139.0			QL=3 ST=2 TYP=5
	8800	LEAR	8	S	0436.1	0436.8	1.9	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0501.0	0524.1	106.3	270.0			QL=6 ST=2 TYP=5
	8400	BERN	22	GRF	0510.0	0524.4	60.0	226.0			
	8800	ATHN	47	GB	0510.0	0515.3	35.1	180.0			QL=2 ST=2 TYP=5
	8800	MANI	22	GRF	0510.5	0524.8	19.5	270.4	90.1		
	2695	ATHN	4	S/F	0512.0	0516.1	29.0	31.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1110.0	1112.9	25.0	254.0			
	8800	ATHN	47	GB	1111.0	1113.3	35.0	239.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1111.8	1112.8	16.8	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1112.0	1132.0	20.0D	15.8	5.6		
	2695	ATHN	4	S/F	1112.6	1113.3	33.4	28.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1112.8	1113.1	.3D	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1120.0	1130.0	40.0	8.2	4.1		
	2800	OTTA	40	F	1246.7	1247.2	1.3	4.8			
	8800	ATHN	4	S/F	1258.8	1301.3	10.3	28.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1259.0	1300.0	9.0	20.0			
	8800	SGMR	4	S/F	1259.6	1300.3	3.2	37.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F	C	1329.0	1332.0	6.5	17.4	7.4		
	8800	ATHN	4	S/F	1329.0	1332.6	7.0	16.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1329.0	1334.0	6.1	19.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1329.3	1329.3	.2	20.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1331.6	1332.0	.5	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1432.0	1434.0	4.0	9.6	4.8		
	8800	SGMR	4	S/F	1432.1	1432.8	2.5	32.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1432.6	1433.3	1.2	21.0			QL=6 ST=2 TYP=3
	8400	BERN	46	C	1450.0	1626.4	120.0D	178.0			
	8800	ATHN	47	GB	1453.6	1454.6	12.7	50.0			QL=2 ST=2 TYP=5
	8800	SGMR	47	GB	1453.8	1454.3	1.2	52.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1454.3	1456.3	2.0	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1508.0	1512.8	10.0	135.0	42.4		
	2695	SGMR	47	GB	1510.3	1512.8	7.5	130.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1510.6	1513.3	21.0	110.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1510.6	1513.3	13.7	66.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1511.3	1512.8	4.5	90.0			QL=6 ST=2 TYP=5
	2800	OTTA	30	PBI	1518.0	1518.0	30.0	19.2	9.2		
	8800	ATHN	47	GB	1535.3	1538.1	11.8	78.0			QL=6 ST=2 TYP=5
	2800	OTTA	46F	C	1535.5	1537.7	9.0	77.0	24.0		
	2695	ATHN	47	GB	1536.3	1538.1	7.5	79.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	1605.0	1705.0	130.0	28.0	14.6		
	8800	ATHN	47	GB	1612.1	1626.8	23.2	100.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1612.6	1626.8	22.2	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	3A	S	1623.0	1629.0	10.0	12.0	6.6		
	2800	OTTA	4	S/F	1625.5	1626.4	1.8	14.4	7.2		
	8800	SGMR	8	S	1627.8E	1628.8	1.0D	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1628.0E	1629.5	1.5D	19.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1642.6	1643.3	.7D	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	45	C	1736.0	1741.6	10.0	69.0	18.2		
	2800	OTTA	29	PBI	1746.0	1746.0	20.0	8.6	4.3		
	2800	OTTA	21	GRF	1820.0	1900.0	95.0	13.6	6.8		
	2800	OTTA	3A	S	1852.0	1854.0	12.0	16.8	8.4		
	2800	OTTA	3	S	1854.5	1855.7	2.0	12.0	5.6		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
12	2695	PENT	240	R	2300.0	2315.0	15.0	4.6	2.3		
	2695	PENT	1	S	2319.0	2319.3	1.0	4.6	2.3		
	8800	PALE	47	GB	2319.0	2319.3	.6	58.0			QL=6 ST=2 TYP=5
	2695	PENT	27	RF	2335.0		95.0	7.0	5.5		
	2695	PENT	24	R	2335.0	2345.0	10.0	7.0	3.5		
	2695	PENT	24	R	2345.0		55.0	7.0			
13	2695	LEAR	8	S	0006.6	0007.1	1.0	30.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0145.1	0151.1	11.9	28.0			QL=6 ST=2 TYP=2
	8800	LEAR	4	S/F	0148.6	0150.6	7.7	40.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0149.1	0150.6	1.5D	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0259.1	0259.8	1.7	18.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0321.3	0322.1	4.7	18.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0349.8	0350.0	3.3	22.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0349.8	0350.0	2.0	10.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0449.5	0452.6	25.5	11.0			QL=6 ST=2 TYP=3
	8800	MANI	22	GRF	0450.5	0508.3	20.5	91.1	30.4		
	8800	LEAR	4	S/F	0450.8	0452.8	6.0	23.0			QL=6 ST=2 TYP=3
	2695	MANI	22	GRF	0451.0	0505.3	17.0	23.8	7.9		
	2695	LEAR	4	S/F	0452.6	0453.0	4.2	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0501.8	0504.1	7.2	37.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0925.6	0930.0	11.4	36.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0927.0E	0929.0	13.0D	39.0			QL=6 ST=2 TYP=3
	8800	ATHN	49	GB	0943.6	0946.0	23.4	1899.0			QL=2 ST=2 TYP=6
	8400	BERN	47	GB	0944.3	0947.4U	50.0	2520.0D			
	2695	SGMR	47	GB	0944.3	0946.3	5.5	189.0			QL=4 ST=3 TYP=5
	2695	ATHN	49	GB	0944.3	0946.5	22.7	750.0			QL=6 ST=2 TYP=6
	8800	SGMR	47	GB	0944.3	0955.0	18.0	230.0			QL=4 ST=3 TYP=5
	8800	MANI	47	GB	0944.5	0945.1	3.5	851.0	283.7		
	2695	MANI	4	S/F	0944.5	0945.4	3.5	149.8	49.9		
	8800	ATHN	47	GB	1009.0	1014.5	92.5	189.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1009.0	1014.5	92.5	119.0			QL=6 ST=2 TYP=5
	2800	OTTA			1050.0		150.0D	51.0			
	2800	OTTA	1	S	1400.0	1405.0	5.0D	2.5			
	8800	SGMR	8	S	1406.3	1406.5	.3	24.0			QL=6 ST=2 TYP=3
	2695	PENT	1	S	1408.0	1410.5	4.0	3.6	1.6		
	2695	ATHN	4	S/F	1441.5	1445.6	10.1	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1442.0	1445.5	8.0	12.2	3.0		
	8800	ATHN	4	S/F	1443.8	1445.6	4.5	9.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1444.1	1445.3	2.0	26.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1445.0	1445.5	1.0	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1545.0	1550.0	25.0	3.2	1.7		
	2800	OTTA	20	GRF	1615.0	1633.0	30.0	8.4	4.0		
	2800	OTTA	1	S	1650.0	1653.2	10.0	7.4	2.5		
	2800	OTTA	260	FAL	1700.0	1745.0	45.0	-5.8	-2.9		
	8800	SGMR	8	S	1700.6	1700.8	2.0	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1815.0	1818.2	15.0	53.0	24.1		
	8800	SGMR	49	GB	1815.1	1817.8	19.7	540.0			QL=6 ST=2 TYP=7
	8800	PALE	49	GB	1816.1	1817.5	9.5	610.0			QL=6 ST=2 TYP=7
	2695	SGMR	49	GB	1816.1	1818.1	18.0	70.0			QL=6 ST=2 TYP=7
	2695	PALE	49	GB	1816.8	1818.5	6.3	66.0			QL=6 ST=2 TYP=7
	2800	OTTA	29	PBI	1830.0	1830.0	30.0	8.4	3.8		
	2800	OTTA	20	GRF	1910.0	1920.0	25.0	3.6	1.4		
	2800	OTTA	21	GRF	1945.0	2010.0	70.0	8.4	3.8		
	2800	OTTA	1	S	1948.0	1951.0	6.0	5.0	2.5		
	8800	SGMR	8	S	1950.1	1950.6	.7	26.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	2103.1	2103.5	.4D	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	2110.0	2117.0	25.0	3.2	1.6		
	2800	OTTA	21	GRF	2144.0	2223.0	205.0	32.0	10.6		
	2800	OTTA	46F	C	2145.0	2147.0	5.0	28.0	11.2		
	2695	SGMR	4	S/F	2145.0	2147.0	2.8	36.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	2145.0	2147.0	3.1	80.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2145.0	2147.1	3.6	100.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	2145.1	2147.1	2.5	39.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	2154.1	2154.3	.3	5.0			
	2695	SGMR	4	S/F	2156.8	2158.8	6.3	32.0			QL=6 ST=2 TYP=3
	2695	PALE	4	S/F	2156.8	2158.8	3.8	32.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	2157.0	2159.0	5.0	12.6	5.0		
	2695	PENT	28	PRE	2313.0	2315.5	8.0	14.6	10.4		
	8800	PALE	8	S	2315.1	2316.8	2.0	24.0			QL=6 ST=3 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
13	2695	PENT	3	S	2321.0	2326.0	13.0	159.0	54.0		
	2695	MANI	3	S	2321.0	2326.4	12.0	180.0	60.0		
	8800	PALE	49	GB	2322.3	2325.8	32.8	630.0			QL=6 ST=2 TYP=6
	2695	PALE	47	GB	2322.8	2326.1	20.5	189.0			QL=6 ST=2 TYP=5
	8800	MANI	3	S	2323.5	2326.0	6.0	281.1	93.7		
	2695	SGMR	47	GB	2323.8	2325.8	4.5	60.0			QL=4 ST=2 TYP=5
	8800	LEAR	49	GB	2324.6E	2325.8	6.4D	740.0			QL=3 ST=2 TYP=6
	2695	LEAR	47	GB	2324.6E	2326.3	3.2D	200.0			QL=3 ST=2 TYP=5
	8800	SGMR	47	GB	2324.8	2325.8	3.5	200.0			QL=4 ST=2 TYP=5
	2695	PENT	29	PBI	2334.0	2334.0	30.0	27.0	17.1		
14	2695	PENT	3	S	0132.5	0133.0	4.0	31.0	7.8		
	2695	LEAR	4	S/F	0132.6	0132.8	4.9	46.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0132.6	0132.8	.5	49.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0132.8	0133.3	1.3	64.9	21.6		
	8800	PALE	8	S	0142.8	0143.3	.8	36.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0414.6	0415.1	1.2	16.0			QL=6 ST=3 TYP=3
	8800	LEAR	20	GRF	0416.6	0420.3	8.0	24.0			QL=6 ST=2 TYP=2
	8800	ATHN	8	S	0423.3	0423.6	1.7	19.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0455.0	0457.1	11.6	50.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0455.3	0457.0	24.8	88.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0455.3	0457.1	12.3	48.0			QL=6 ST=2 TYP=3
	2695	MANI	4	S/F	0455.5	0457.0	2.7	55.3	18.4		
	2695	LEAR	47	GB	0455.6	0457.1	24.5	60.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	0456.5D	0457.0U	1.0D	53.0			ONLY PAPER REC
	8800	MANI	4	S/F	0456.5	0457.0	1.1	78.0	25.0		
	2695	ATHN	49	GB	0612.1	0625.3	79.2	1199.0			QL=6 ST=2 TYP=6
	8800	ATHN	49	GB	0613.8	0625.8	77.5	1500.0			QL=2 ST=2 TYP=6
	8800	LEAR	49	GB	0620.1	0625.1	52.5	2399.0			QL=6 ST=2 TYP=6
	8800	MANI	47	GB	0621.0	0624.9	23.3	2350.0	868.0		
	2695	MANI	47	GB	0621.2	0624.5	23.8	2050.0	796.0		
	2695	LEAR	49	GB	0622.5	0624.8	50.1	1000.0			QL=6 ST=2 TYP=6
	8400	BERN	47	GB	0623.0U	0625.0U	30.0U	828.0D			ONLY PAPER REC
	8400	BERN	3	S	0847.0U	0848.0U	1.0D	36.0			ONLY PAPER REC
	8800	SGMR	20	GRF	1129.8	1133.5	15.0	44.0			QL=5 ST=2 TYP=2
	2800	OTTA	3	S	1135.0	1135.5	1.0	12.0	6.0		
	2800	OTTA	29	PBI	1136.0	1136.0	4.5	4.8	-2.4		
	2800	OTTA	21	GRF	1225.0	1315.0	125.0	26.8	10.0		
	2800	OTTA	4	S/F	1234.0	1235.5	6.0	12.4	5.0		
	2695	SGMR	8	S	1235.3	1235.5	1.5	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1253.5	1254.2	2.5	5.8	2.6		
	8400	BERN	4	S/F	1300.0U	1309.2	35.0D	130.0			
	8800	ATHN	47	GB	1305.0	1307.6	19.1	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1306.0	1307.5	7.5	21.6	10.4		
	2695	ATHN	4	S/F	1306.5	1307.6	17.6	24.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1307.0	1309.1	11.6	180.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1307.3	1307.6	6.5	34.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1355.9	1356.0	1.0	6.2	2.6		
	8800	ATHN	47	GB	1437.5	1441.1	13.8	100.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1440.0	1441.6	4.0U	93.0			
	2695	ATHN	4	S/F	1440.3	1441.1	2.5	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1440.5	1441.5	4.0	14.8	5.0		
	8800	SGMR	47	GB	1440.5	1441.6	7.6	110.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1441.1	1442.6	1.5D	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	22	GRF	1455.0	1506.0	85.0	18.4	6.2		
	8400	BERN	3	S	1628.0	1628.6	1.0U	34.0			
	8800	ATHN	8	S	1628.1	1628.8	1.4	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	23	GRF	1700.0	1930.0	435.0	44.0	18.2		
	8800	SGMR	47	GB	1812.0	1816.6	16.0	239.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1812.1	1817.0		290.0			QL=6 ST=3 TYP=5
	2800	OTTA	3	S	1814.0	1817.0	9.0	58.0	17.0		
	2695	SGMR	47	GB	1815.3	1816.8	10.2	60.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1816.3	1816.8		67.0			QL=6 ST=3 TYP=5
	2800	OTTA	3	S	1845.0	1846.2	9.0	12.0	5.6		
	2695	SGMR	8	S	1845.8	1846.0	2.0	16.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2042.8	2043.6	1.0	26.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	2137.0	2137.1	.1	18.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	2158.0	2158.3	3.3	89.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2158.1	2158.6	2.7	89.0			QL=6 ST=2 TYP=5
15	8800	PALE	49	GB	0030.3	0030.6	6.5	1100.0			QL=6 ST=2 TYP=6

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
15	8800	LEAR	49	GB	0030.3	0030.6	10.8	1000.0			QL=6 ST=2 TYP=6
	2695	PALE	49	GB	0030.5	0031.3	7.1	810.0			QL=6 ST=2 TYP=6
	2695	LEAR	49	GB	0030.5	0031.3	19.1	810.0			QL=6 ST=2 TYP=6
	2695	PENT	47	GB	0030.5	0031.5	13.0	850.0	230.0		
	8800	MANI	47	GB	0030.8	0031.1	6.2	2800.0	1057.0		
	2695	MANI	47	GB	0030.8	0031.6	12.2	810.3	270.1		
	2695	PENT	29	PBI	0043.5	0043.5	65.0D	22.2			
	2695	LEAR	4	S/F	0151.3	0154.1	6.2	43.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0151.6	0154.3	7.9	27.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0153.3	0154.1	3.7	37.8	12.6		
	8800	LEAR	47	GB	0217.6	0219.3	72.7	300.0			QL=6 ST=2 TYP=5
	8800	MANI	3	S	0217.7	0219.7	6.8	294.3	98.1		
	8800	PALE	47	GB	0217.8	0219.5	54.3	330.0			QL=6 ST=2 TYP=5
	2695	MANI	3	S	0218.0	0220.1	7.0	39.3	13.1		
	2695	LEAR	4	S/F	0218.6	0219.6	8.0	39.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0219.6	0219.6	.2	36.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0326.4	0326.6	1.6	22.7	7.6		
	2695	LEAR	8	S	0326.8	0326.8	1.2	22.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0453.8	0455.5	1.7D	16.0			QL=6 ST=2 TYP=2
	8800	LEAR	20	GRF	0500.3	0501.0	.7D	11.0			QL=6 ST=2 TYP=2
	8800	ATHN	47	GB	0601.8	0603.8	30.2	88.0			QL=6 ST=2 TYP=5
	8800	MANI	3	S	0602.0	0603.5	2.5	104.6	34.9		
	2695	LEAR	4	S/F	0602.5	0603.6	3.3	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0602.5	0603.8	13.3	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0602.6	0604.1	9.2	5.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	0711.7	0712.4	2.0	12.0			
	8800	LEAR	8	S	0711.8	0712.5	1.2	28.0			QL=6 ST=2 TYP=3
	8400	BERN	4	S/F	0751.7	0816.4	70.0D	236.0			
	2695	ATHN	47	GB	0805.0	0819.3	67.1	239.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	0808.0	0816.3	69.8	200.0			QL=6 ST=2 TYP=5
	2695	MANI	46	C	0808.0	0819.0	33.5	161.6	53.9		
	2695	LEAR	47	GB	0808.8	0811.3	12.0	88.0			QL=6 ST=2 TYP=5
	8800	MANI	46	C	0809.0	0818.9	21.0	287.8	95.9		
	8800	LEAR	47	GB	0809.1	0811.1	11.7	76.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0820.8	0820.8	12.8	260.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0820.8	0820.8	12.8	200.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0850.1	0851.0	2.7	57.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0859.1	0859.3	27.0	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	49	GB	1018.0	1020.3	18.3	2199.0			QL=6 ST=2 TYP=6
	8400	BERN	47	GB	1018.5	1020.8U	120.0	2054.0D			
	2695	SGMR	47	GB	1018.6	1020.6	17.7	189.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1036.3	1037.5	41.7	239.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1036.3	1038.3	41.7	92.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	1040.0	1100.0	265.0D	88.0			
	8800	ATHN	47	GB	1331.6	1335.6	6.7	67.0			QL=6 ST=2 TYP=5
	8400	BERN	20	GRF	1332.5	1335.2	17.0	38.0			
	8800	SGMR	47	GB	1336.3	1336.6	3.8	60.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1349.8	1351.1	10.0	219.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1350.0	1351.0	14.0	170.0			
	2800	OTTA	3	S	1350.0	1351.1	2.0	11.4	5.0		
	2695	ATHN	8	S	1350.6	1351.1	1.4	16.0			QL=6 ST=2 TYP=3
	8800	ATHN	49	GB	1405.3	1414.8	38.5	890.0			QL=6 ST=2 TYP=6
	2695	PENT	28	PRE	1406.0	1409.0	7.0	14.2	7.1		
	8800	SGMR	49	GB	1407.6	1408.5	22.0	50.0			QL=6 ST=2 TYP=7
	2695	ATHN	47	GB	1407.6	1414.8	25.4	250.0			QL=6 ST=2 TYP=5
	2695	SGMR	49	GB	1411.0	1416.0	16.6	219.0			QL=6 ST=2 TYP=7
	2800	OTTA	4	S/F	1413.0	1416.0	9.0	213.0	66.0		
	8400	BERN	47	GB	1413.5	1415.9	7.0	1187.0			
	2800	OTTA	30	PBI	1422.0	1422.0	35.0	25.0	8.0		
	2800	OTTA	21	GRF	1444.0	1447.0	14.0	7.8	3.7		
	2800	OTTA	1	S	1444.5	1445.0	1.5	5.2	2.6		
	2800	OTTA	4	S/F	1509.0	1513.8	10.0	475.0	155.0		
	2695	ATHN	49	GB	1509.3	1513.3	18.5	510.0			QL=6 ST=2 TYP=6
	8800	ATHN	49	GB	1509.6	1512.5	34.2	2199.0			QL=2 ST=2 TYP=6
	2695	SGMR	49	GB	1510.1	1511.5	14.9	400.0			QL=6 ST=2 TYP=7
	8400	BERN	47	GB	1510.3	1512.6U	40.0	2360.0D			
	8800	SGMR	49	GB	1510.8	1512.0	6.0	1000.0			QL=6 ST=2 TYP=7
	2800	OTTA	30	PBI	1519.0	1519.0	15.0	20.8	10.4		
	2800	OTTA	3	S	1521.2	1523.0	6.0	14.0	6.8		
	2800	OTTA	21	GRF	1835.0	1843.5	19.0	5.2	2.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
15	2800	OTTA	8	S	1835.2	1835.5	.8	4.8	1.6		
	2800	OTTA	4	S/F	1839.0	1840.5	3.0	26.0	8.6		
	2695	SGMR	8	S	1839.8	1840.6	1.0	29.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	1840.3	1840.5	.3	27.0			QL=6 ST=2 TYP=3
	2800	OTTA	260	FAL	1855.0	1905.0	10.0	-5.4	-2.7		
	8800	SGMR	4	S/F	2028.8	2031.1	3.3	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	2057.0	2102.0	50.0	4.2	2.3		
	8800	SGMR	47	GB	2057.3	2101.5	19.5	87.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2057.6	2101.6	17.5	100.0			QL=6 ST=2 TYP=5
16	2695	PENT	1	S	0042.0	0042.5	1.0	6.2			
	8800	PALE	8	S	0158.1	0158.1	.2	32.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0158.1	0158.3	1.2	30.0			QL=6 ST=2 TYP=3
	8800	MANI	47	GB	0207.0	0212.4	20.0	865.2	288.4		
	8800	LEAR	49	GB	0207.3	0212.3	45.0	790.0			QL=6 ST=2 TYP=6
	8800	PALE	49	GB	0207.8	0212.3	21.7	900.0			QL=6 ST=2 TYP=6
	2695	MANI	3	S	0209.8	0212.4	9.2	129.6	43.2		
	2695	LEAR	47	GB	0211.1	0212.3	37.2	119.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	0211.3	0212.1	18.2	100.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0229.5	0232.3	6.6	139.0			QL=6 ST=2 TYP=5
	2695	PALE	20	GRF	0229.5	0232.3	6.6	36.0			QL=6 ST=2 TYP=2
	8800	PALE	47	GB	0258.8	0259.1	2.3	71.0			QL=6 ST=2 TYP=5
	2695	PALE	8	S	0300.5	0301.0	.5	30.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0502.0	0503.8	2.8	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0724.6	0726.3	6.0	13.0			QL=6 ST=2 TYP=2
	8800	LEAR	4	S/F	0724.8	0725.1	5.8	21.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1036.5	1039.1	8.5	30.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1036.6	1039.1	6.5	150.0			QL=6 ST=2 TYP=5
	8800	SGMR	8	S	1132.0	1132.3	.5	44.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1315.0	1330.0	20.0	4.0	1.7		
	2800	OTTA	21	GRF	1615.0	1640.0	70.0	11.0	5.5		
	8800	SGMR	47	GB	1637.5	1640.1	10.3	160.0			QL=6 ST=2 TYP=5
	8400	BERN	45	C	1637.5	1641.3	13.0D	231.0			
	2695	SGMR	4	S/F	1637.6	1640.1	6.5	34.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F	C	1637.7	1641.2	9.0	36.0	13.2		
	2695	PALE	4	S/F	1638.8	1640.0	3.2	28.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	1639.3	1640.1	3.5	400.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1919.3	1919.5	2.8	90.0			QL=6 ST=2 TYP=5
	2800	OTTA	20	GRF	1925.0	1930.0	20.0	2.6	1.3		
	8800	PALE	47	GB	1926.1	1926.3	.4	66.0			QL=6 ST=2 TYP=5
	8800	PALE	8	S	1933.3	1935.3	2.0D	46.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	1951.1	1951.8	1.0	30.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	2027.0		70.0	10.2			
	2800	OTTA	40	F	2031.0	2038.1	25.0	46.0			
	2695	SGMR	4	S/F	2031.1	2033.1	3.2	28.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2032.1	2032.3	1.0	21.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	2032.1	2032.3	21.5	50.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2034.1	2036.1	6.0	119.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	2034.5	2036.6	6.1	42.0			QL=6 ST=2 TYP=5
	2695	PENT	21	GRF	2325.0	2350.0	100.0	12.0	5.4		
	8800	PALE	47	GB	2332.8	2333.5	18.0	200.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	2332.8	2333.5	9.8	150.0			QL=5 ST=2 TYP=5
	8800	MANI	3	S	2333.3	2333.8	2.5	192.5	64.2		
17	8800	MANI	4	S/F	0240.5	0246.0	12.5	365.7	121.9		
	8800	LEAR	47	GB	0241.6	0242.6	24.5	189.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0241.8	0242.5	10.3	200.0			QL=6 ST=2 TYP=5
	2695	LEAR	8	S	0242.1	0242.6	1.0	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0313.5	0315.1	4.6	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0645.0	0649.8	6.1	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0707.1	0707.5	2.9	18.0			QL=6 ST=2 TYP=3
	8400	BERN	47	GB	1029.2	1051.0U	56.0	2340.0D			
	8800	SGMR	47	GB	1029.3	1029.8	1.8	63.0			QL=6 ST=2 TYP=5
	2695	ATHN	49	GB	1047.1	1050.6	14.4	620.0			QL=6 ST=2 TYP=6
	8800	ATHN	49	GB	1047.8	1048.8	17.2	420.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1047.8	1050.8	21.5	2100.0			QL=6 ST=2 TYP=7
	2800	OTTA	4	S/F	1048.0	1051.0	12.0	435.0	-45.0		
	2695	SGMR	49	GB	1048.6	1050.8	8.5	500.0			QL=6 ST=2 TYP=7
	2800	OTTA	29	PBI	1100.0	1100.0	25.0	32.6	16.3		
	2800	OTTA	1A	S	1203.0	1204.5	3.0	4.0	2.2		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
17	2695	SGMR	8	S	1203.6	1203.6	.2	30.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	1203.7	1203.8	.6	24.0			
	8800	ATHN	47	GB	1306.3	1306.6	2.5	110.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1307.5	1307.6	.5	91.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1307.5	1307.8	3.0	94.0			
	2800	OTTA	21	GRF	1325.0	1407.0	70.0	5.0			
	8400	BERN	3	S	1338.0	1339.0	7.0D	183.0			
	8800	ATHN	47	GB	1338.3	1339.0	5.7	160.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1338.5	1339.0	2.0	33.0	16.5		
	2695	SGMR	8	S	1338.5	1339.0	1.1	40.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	1338.5	1339.1	2.0	30.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1338.6	1338.8	1.2	139.0			QL=6 ST=2 TYP=5
	2800	OTTA	20	GRF	1453.0	1458.0	75.0	16.8	5.6		
	2800	OTTA	21	GRF	1605.0	1630.0	70.0	5.6	2.8		
	8800	ATHN	20	GRF	1606.8	1607.8	6.2	13.0			QL=6 ST=2 TYP=2
	8800	SGMR	8	S	1608.1	1608.3	.2	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1612.7	1613.1	1.0	4.8	2.0		
	8800	ATHN	4	S/F	1621.8	1622.6	2.7	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1622.0	1623.0	2.0	4.0	2.0		
	2800	OTTA	2	S/F	1637.5	1638.0	3.0	2.8	2.0		
	2800	OTTA	4	S/F	1655.0	1656.5	4.0	16.2	7.4		
	2800	OTTA	2	S/F	1719.0	1719.2	1.0	2.8			
	2800	OTTA	22	GRF	1720.0	1725.0	25.0	2.2			
	8800	PALE	47	GB	1824.6	1824.8	.2	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	1834.0	1900.0	240.0	12.2	4.0		
	2800	OTTA	3	S	1834.5	1835.5	3.0	19.2	6.4		
	8800	SGMR	47	GB	1834.6	1835.3	6.9	189.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1834.8	1835.3	5.0	219.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1835.0	1835.3	1.0	28.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	1835.1	1835.8	1.0	27.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1849.5	1851.8	4.5	15.4	3.9		
	8800	SGMR	4	S/F	1849.8	1851.6	7.0	47.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	1849.8	1851.8	5.0	58.0			QL=6 ST=2 TYP=5
	2695	PALE	8	S	1851.3	1851.8	1.0	22.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1851.3	1851.8	.7	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1900.5	1902.2	7.0	18.0	6.0		
	2695	SGMR	8	S	1901.3	1902.1	1.2	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	2131.8	2132.4	2.0	13.0	6.5		
	2695	SGMR	8	S	2132.3	2133.0	.7D	19.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	2132.8	2133.1	.3	47.0			QL=6 ST=2 TYP=3
18	8800	LEAR	4	S/F	0213.6	0216.3	9.5	10.0			QL=6 ST=2 TYP=3
	8800	MANI	3	S	0236.0	0236.3	.6	43.9	14.6		
	2695	MANI	1	S	0236.0	0236.3	1.2	7.2	2.4		
	8800	LEAR	8	S	0236.5	0236.6	1.3	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0236.5	0236.6	3.1	18.0			QL=6 ST=2 TYP=3
	8400	BERN	46	C	0940.0	1001.9	26.0U	142.0			
	8800	ATHN	47	GB	0940.1	0940.6	2.5	60.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	0945.5	0946.1	7.3	48.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0945.5	0946.6	4.5	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1001.0	1001.6	4.1	139.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1001.1	1001.8	4.5	189.0			QL=4 ST=2 TYP=5
	8800	ATHN	4	S/F	1041.3	1041.5	2.3	22.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1041.6	1042.3	2.0	34.0			QL=4 ST=2 TYP=3
	8400	BERN	46	C	1101.5	1103.8	6.0U	256.0			
	8800	SGMR	47	GB	1102.1	1103.6	3.2	200.0			QL=3 ST=2 TYP=5
	2695	SGMR	8	S	1103.6	1103.6	.2	20.0			QL=3 ST=2 TYP=3
	2800	OTTA	22	GRF	1155.0	1210.0	115.0	7.6	3.8		
	8800	ATHN	8	S	1213.8	1214.1	1.2	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1214.1	1214.3	.5	28.0			QL=3 ST=2 TYP=3
	2800	OTTA	21	GRF	1420.0	1550.0	200.0	15.4	5.0		
	8400	BERN	3	S	1511.0	1514.0	30.0	354.0			
	8800	ATHN	47	GB	1511.8	1514.0	10.2	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1512.0	1514.0	8.0	260.0	66.6		
	2695	ATHN	47	GB	1512.3	1514.0	7.7	280.0			QL=6 ST=2 TYP=5
	2800	OTTA	29	PBI	1520.0	1520.0	15.0	12.0	4.0		
	2800	OTTA	4	S/F	1626.5	1628.5	13.0	16.2	5.4		
	8800	SGMR	8	S	1659.3	1659.5	.5	30.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1803.1	1804.3	2.7	33.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1828.5	1830.0	5.0	11.2	3.8		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
18	2800	OTTA	4	S/F	1902.5	1902.8	1.0	15.4	3.8		
	8800	SGMR	47	GB	1948.3	1949.6	14.3	130.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1949.0	1949.8	13.6	73.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	2101.0	2101.2	1.0	14.6	5.0		
	8800	PALE	8	S	2101.1	2101.3	.2	49.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	2136.5	2140.2	5.5	77.0	30.0		
	2695	SGMR	47	GB	2137.1	2140.3	17.2	76.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	2137.1	2140.3	15.2	90.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2138.0	2140.3	14.3	96.0			QL=6 ST=2 TYP=5
	2800	OTTA	30	PBI	2142.0	2142.0	90.0	22.2	10.0		
	2800	OTTA	40	F	2142.8	2147.7	5.5	16.2			
	8800	PALE	20	GRF	2152.3	2152.5	10.7	59.0			QL=6 ST=2 TYP=2
	2695	PALE	20	GRF	2152.3	2152.6	8.8	28.0			QL=6 ST=2 TYP=2
	2800	OTTA	8	S	2255.0	2255.0	.1	4.8			
19	8800	LEAR	8	S	0019.1	0019.6	1.7	11.0			QL=6 ST=2 TYP=3
	2695	PENT	3	S	0019.9	0020.5	9.1	245.0	61.0		
	2695	LEAR	47	GB	0046.1	0048.8	7.4	100.0			QL=6 ST=2 TYP=5
	2695	PENT	4	S/F	0046.5	0049.0	6.0	90.0	22.4		
	8800	LEAR	47	GB	0046.8	0048.8	3.8	100.0			QL=6 ST=2 TYP=5
	2695	MANI	4	S/F	0047.0	0049.1	4.0	139.2	46.4		
	8800	PALE	47	GB	0047.1	0048.8	5.2	119.0			QL=6 ST=2 TYP=5
	8800	MANI	4	S/F	0047.2	0049.2	5.0	84.0	28.0		
	2695	PALE	47	GB	0048.3	0048.8	1.5	89.0			QL=6 ST=2 TYP=5
	2695	PENT	29	PBI	0052.5	0052.5	7.0	5.0	2.5		
	8800	LEAR	4	S/F	0337.5	0339.3	3.5	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0338.8	0340.0	2.2	5.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0744.5	0746.1	4.5	13.0			QL=6 ST=2 TYP=2
	8400	BERN	4	S/F	0749.0	0750.9	7.0	26.0			
	8800	ATHN	4	S/F	0749.6	0751.3	6.9	15.0			QL=5 ST=2 TYP=3
	8800	LEAR	4	S/F	0750.8	0750.8	3.2	23.0			QL=6 ST=2 TYP=3
	2695	MANI	4	S/F	0822.0	0826.9	10.0	199.9	66.6		
	2695	ATHN	47	GB	0822.3	0827.8	16.2	300.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0822.6	0827.1	15.7	189.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	0823.0	0827.6	18.0U	26.0			
	8800	MANI	3	S	0824.0	0826.6	6.5	11.1	3.7		
	8800	ATHN	47	GB	0824.8	0827.8	13.7	71.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0825.0	0827.1	8.5	44.0			QL=6 ST=2 TYP=5
	2800	OTTA	23	GRF	1100.0	1254.0	215.0	21.6	10.0		
	8400	BERN	41	F	1101.0	1103.4	14.0	80.0			
	8800	ATHN	47	GB	1102.5	1103.5	2.8	51.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1102.8	1103.5	2.5	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1103.0	1103.5	2.5	37.0	18.6		
	8800	SGMR	47	GB	1103.1	1103.3	.5	69.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1103.1	1103.5	.9	40.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1108.0	1108.3	2.6	32.0			QL=6 ST=3 TYP=3
	2800	OTTA	3	S	1108.0	1108.3	4.0	51.0	12.6		
	2695	ATHN	4	S/F	1108.1	1108.5	3.5	49.0			QL=6 ST=3 TYP=3
	2695	SGMR	4	S/F	1108.1	1108.6	2.4	46.0			QL=6 ST=2 TYP=3
	2800	OTTA	45	C	1147.0	1148.3	11.0	13.4	-3.8		
	2800	OTTA	20	GRF	1223.0	1228.0	19.0	11.2	5.2		
	2800	OTTA	1	S	1323.0	1325.0	9.0	4.8	2.3		
	2800	OTTA	1	S	1347.2	1347.3	2.0	7.4	3.4		
	2800	OTTA	21	GRF	1516.0	1523.0	18.0	3.2	1.8		
	2800	OTTA	1	S	1518.5	1519.0	1.2	3.4	1.7		
	2800	OTTA	46F	C	1715.0	1717.5	8.0	110.0	32.0		
	2695	ATHN	47	GB	1715.6	1717.8	13.4	100.0			QL=5 ST=2 TYP=5
	8800	ATHN	47	GB	1715.8	1717.5	13.2	78.0			QL=5 ST=2 TYP=5
	8400	BERN	3	S	1716.0	1717.4	10.0	126.0			
	2695	SGMR	47	GB	1716.5	1717.5	5.3	110.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1716.6	1717.5	5.4	119.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1716.8	1717.3	1.3	100.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1717.1	1717.3	1.2	139.0			QL=6 ST=2 TYP=5
	2800	OTTA	29	PBI	1723.0	1723.0	40.0	11.2	3.8		
	2800	OTTA	4	S/F	1816.0	1816.8	1.5	32.0	13.0		
	8800	SGMR	4	S/F	1816.1	1816.8	3.9	33.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1816.6	1816.8	1.2	27.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	1816.6	1817.0	.5	30.0			QL=6 ST=3 TYP=3
	2800	OTTA	29	PBI	1817.5	1817.5	6.0	6.6	2.2		
	2800	OTTA	1	S	1825.5	1826.0	9.0	6.6	2.2		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
19	2800	OTTA	21	GRF	1905.0	1940.0	95.0	13.0	6.5		
	2800	OTTA	1	S	1910.0	1911.0	3.0	2.6	1.3		
	2695	SGMR	4	S/F	1916.6	1919.3	3.9	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1918.0	1919.5	7.0	8.6	4.3		
	8800	SGMR	8	S	1919.0	1920.1	1.6	28.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	1919.0	1920.1	1.6	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1928.0	1930.2	4.0	6.6	3.3		
	2800	OTTA	4	S/F	1948.0	1950.1	12.0	82.0	31.4		
	8800	SGMR	47	GB	1948.3	1949.6	14.3	130.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1948.6	1949.6	12.7	169.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1949.0	1949.8	13.6	73.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1949.1	1949.8	6.2	80.0			QL=6 ST=2 TYP=5
	2800	OTTA	29	PBI	2000.0	2000.0	30.0	13.0	6.5		
	2695	PALE	47	GB	2007.1	2007.1	1.0	219.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2007.1	2007.1	1.0	320.0			QL=6 ST=2 TYP=5
20	2695	PALE	47	GB	0019.8	0020.6	13.0	300.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0019.8	0020.6	13.8	290.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0019.8	0020.6	16.3	119.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0019.8	0020.6	1.8	119.0			QL=6 ST=2 TYP=5
	2695	MANI	3	S	0021.4	0022.3	8.6	399.6	133.2		
	8800	MANI	3	S	0021.4	0022.3	6.6	189.4	63.1		
	2695	PENT	29	PBI	0029.0	0029.0	30.0	19.6	7.0		
	2695	PALE	8	S	0053.1	0053.5	.4D	27.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0105.1	0105.1	1.9	30.0			QL=6 ST=2 TYP=3
	8800	LEAR	49	GB	0113.1	0113.3	1.7	520.0			QL=6 ST=2 TYP=7
	8800	PALE	49	GB	0113.1	0113.3	2.0	640.0			QL=6 ST=2 TYP=7
	2695	PENT	3	S	0113.2	0113.5	8.0	129.0	32.2		
	2695	LEAR	49	GB	0113.3	0113.5	4.0	130.0			QL=6 ST=2 TYP=7
	2695	PALE	49	GB	0113.3	0113.5	4.0	130.0			QL=6 ST=2 TYP=7
	2695	MANI	3	S	0114.5	0115.2	5.5	230.8	77.0		
	8800	MANI	47	GB	0114.8	0115.1	2.7	631.4	210.5		
	2695	PENT			0147.0	0150.0	5.0D	1230.0			
	8800	LEAR	49	GB	0147.5	0150.1	46.6	2000.0			QL=6 ST=2 TYP=6
	2695	PALE	49	GB	0147.6	0150.1	14.5	770.0			QL=6 ST=2 TYP=6
	2695	LEAR	49	GB	0147.6	0150.1	42.0	770.0			QL=6 ST=2 TYP=6
	8800	PALE	49	GB	0147.6	0150.1	12.2	2699.0			QL=6 ST=2 TYP=6
	8800	MANI	47	GB	0148.6	0151.7	16.4	2525.6	841.9		
	2695	MANI	47	GB	0149.0	0151.4	39.0	3539.2	1179.7		
	8800	LEAR	8	S	0252.1	0252.3	1.0	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0252.8	0253.1	.3D	13.0			QL=6 ST=2 TYP=3
	2695	MANI	4	S/F	0253.3	0254.1	2.3	34.2	11.4		
	8800	MANI	4	S/F	0253.5	0254.1	1.5	68.9	22.9		
	8800	MANI	3	S	0402.4	0403.3	1.8	432.8	144.3		
	8800	LEAR	47	GB	0402.6	0403.0	2.5	490.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	0402.6	0403.3	6.0	400.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	0402.6	0403.3	6.0	490.0			QL=6 ST=2 TYP=5
	2695	LEAR	49	GB	0402.8	0403.0	1.3	540.0			QL=6 ST=2 TYP=6
	2695	PALE	47	GB	0402.8	0403.0	.5	440.0			QL=3 ST=2 TYP=5
	2695	MANI	47	GB	0403.0	0403.2	3.5	707.8	235.9		
	8800	LEAR	8	S	0559.3	0559.3	.5	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0604.1	0604.3	2.2	13.0			QL=6 ST=2 TYP=3
	8400	BERN	46	C	0632.0	0632.4	15.0	69.0			
	8800	LEAR	47	GB	0632.1	0632.3	8.0	62.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	0632.3	0632.6	9.3	55.0			QL=6 ST=2 TYP=5
	2800	OTTA	23	GRF	1100.0	1345.0	320.0	15.4	7.7		
	8800	SGMR	47	GB	1159.5	1200.3	2.8	310.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1159.6	1200.6	7.7	260.0			QL=6 ST=2 TYP=5
	8400	BERN	4	S/F	1159.8	1200.3	5.0	323.0			
	2800	OTTA	3	S	1200.0	1200.3	3.0	51.0	17.0		
	2695	SGMR	8	S	1200.0	1200.3	1.0	50.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1200.1	1200.6	4.5	43.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1542.5	1543.6	2.8	35.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1542.8	1543.1	1.0	53.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1543.0	1543.2	4.0	40.0			
	2800	OTTA	21	GRF	1700.0	1735.0	310.0	24.2	8.6		
	2800	OTTA	40	F	1705.0	1707.8	22.0	18.0			
	8800	PALE	4	S/F	1706.8	1707.5	20.5	34.0			QL=6 ST=2 TYP=3
	2695	PALE	4	S/F	1706.8	1707.6	12.3	33.0			QL=6 ST=2 TYP=3
	2695	SGMR	20	GRF	1707.1	1707.6	15.0	24.0			QL=6 ST=2 TYP=2

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
20	8800	SGMR	20	GRF	1707.1	1708.3	15.0	20.0			QL=6 ST=2 TYP=2
	2800	OTTA	20	GRF	2040.0	2042.0	25.0	8.4	3.8		
	2695	SGMR	4	S/F	2040.5	2042.0	3.8	18.0			QL=6 ST=2 TYP=3
	8800	SGMR	20	GRF	2041.1	2044.1	3.7	26.0			QL=6 ST=2 TYP=2
	2800	OTTA	21	GRF	2225.0	2315.0	155.0D	22.2			
	8800	SGMR	47	GB	2225.3	2225.8	3.0	70.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	2225.3	2226.0	1.5	16.2	8.1		
	2695	SGMR	8	S	2225.6	2225.8	.5	28.0			QL=6 ST=2 TYP=3
21	2695	PENT	23	GRF	0110.0	0126.0	40.0D	16.3			
	2695	MANI	22	GRF	0111.3	0123.8	18.7	71.3	23.8		
	8800	LEAR	4	S/F	0112.1	0113.6	5.7	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0112.6	0113.5	7.0	34.0			QL=6 ST=2 TYP=3
	2695	PENT	3	S	0112.7	0113.5	3.0	26.6	13.0		
	2695	PALE	8	S	0113.3	0113.5		30.0			QL=6 ST=3 TYP=3
	2695	PENT	3	S	0120.0	0120.8	5.0	21.2	7.0		
	2695	LEAR	4	S/F	0122.6	0123.8	4.2	29.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0123.1	0123.6	1.0	33.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0123.5	0124.0	10.5	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0247.5	0247.6	5.1	21.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0248.0	0248.6	4.6	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0448.1	0450.1	10.2	30.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0448.5	0455.3	19.1	37.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0448.5	0455.3	19.1	49.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0448.8	0450.1	8.2	10.0			QL=6 ST=2 TYP=3
	8800	MANI	4	S/F	0450.5	0456.4	7.3	62.9	21.0		
	2695	MANI	4	S/F	0450.5	0456.4	7.3	30.0	10.0		
	8400	BERN	21	GRF	0452.0	0454.7	10.0D	80.0			
	8800	LEAR	4	S/F	0501.1	0502.3	6.2	7.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0501.1	0505.3	5.9	11.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	0551.6	0551.8	.5	24.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0557.3	0643.0	79.8	86.0			QL=6 ST=2 TYP=2
	8800	LEAR	20	GRF	0609.0	0642.8	48.1	24.0			QL=6 ST=2 TYP=2
	2695	ATHN	47	GB	0625.6	0643.5	33.4	68.0			QL=6 ST=2 TYP=5
	2695	MANI	22	GRF	0627.0	0643.2	29.5	74.9	25.0		
	8800	MANI	22	GRF	0633.0	0642.5	16.5	68.5	22.8		
	8800	ATHN	4	S/F	0635.0	0639.6	4.8	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1050.0	1125.0	300.0D	21.6			
	2800	OTTA	2	S/F	1113.0	1114.0	3.0	9.2	4.6		
	8800	SGMR	4	S/F	1113.1	1114.1	5.2	16.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1113.3	1114.8	3.3	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	40	F	1221.0	1223.0	25.0	10.4			
	2800	OTTA	1	S	1323.0	1324.0	4.0	4.0	2.0		
	8800	SGMR	8	S	1323.6	1324.0	1.0	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1323.6	1324.8	3.5	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1324.0	1324.8	2.8	6.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1425.0	1426.0	6.0	4.0	2.0		
	2800	OTTA	21	GRF	1605.0	1615.0	40.0	16.0			
	8800	ATHN	47	GB	1608.6	1615.3	17.5	100.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1609.1	1616.3	14.7	38.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1610.6	1612.8	8.9	37.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1610.8	1614.5	6.3	23.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1612.0	1612.7	1.0	10.0	5.0		
	8400	BERN	21	GRF	1612.0	1614.8	40.0	132.0			
	2800	OTTA	4	S/F	1614.0	1615.8	4.0	37.4	21.0		
	8400	BERN	3	S	1652.5	1653.1	1.0	40.0			
	8800	SGMR	8	S	1652.6	1653.0	.5	36.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1723.5	1723.6	.3	41.0			QL=6 ST=2 TYP=3
	2800	OTTA	40	F	1744.0	1745.2	12.0	5.2			
	8800	SGMR	8	S	1808.1	1808.3	.7	36.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	1808.3	1808.6	.5	30.0			QL=6 ST=2 TYP=3
	2800	OTTA	26A	FAL	1920.0	1945.0	25.0	-4.4	-2.2		
	2800	OTTA	1	S	1932.0	1932.2	1.0	2.8	1.4		
	2800	OTTA	23	GRF	2200.0	2227.0	230.0D	25.4			
	2800	OTTA	8	S	2226.7	2226.9	.3	18.0			
	8800	PALE	47	GB	2259.8	2302.1	12.0	320.0			QL=6 ST=2 TYP=5
	2695	PENT	4	S/F	2300.8	2302.0	9.0	162.0	31.0		
	2695	PALE	47	GB	2301.5	2302.1	3.8	180.0			QL=6 ST=2 TYP=5
	2695	MANI	3	S	2301.8	2302.5	2.8	167.4	55.8		
22	2695	PENT	1	S	0005.0	0005.6	1.0	4.2	3.2		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
22	8800	LEAR	8	S	0012.3	0013.1	1.5	13.0			QL=6 ST=3 TYP=3
	2695	PENT	3	S	0048.5	0049.0	2.0	20.8	7.0		
	8800	ATHN	47	GB	0520.1	0534.3	39.9	82.0			QL=6 ST=2 TYP=5
	8400	BERN	22	GRF	0528.0	0533.9	50.0U	91.0			
	8800	LEAR	47	GB	0528.6	0533.8	12.2	82.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0530.3	0532.1	10.5	20.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0531.6	0534.0	12.0	8.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1105.0	1120.0	40.0	4.2	2.8		
	2800	OTTA	4	S/F	1154.0	1154.2	1.0	10.0	5.0		
	2800	OTTA	21	GRF	1200.0	1300.0	110.0	6.4	4.0		
	2800	OTTA	1	S	1217.5	1220.5	4.5	5.6	2.8		
	8400	BERN	20	GRF	1219.0	1220.3	30.0	28.0			
	2800	OTTA	23	GRF	1425.0	1457.0	270.0	24.6	13.2		
	2800	OTTA	1	S	1845.0	1845.5	1.2	9.6	4.4		
	2695	PENT	32	ABS	2240.0	2315.0	60.0	-5.6	-3.0		
	2695	PENT	21	GRF	2341.0	0015.0	90.0	8.4	4.2		
23	8800	LEAR	47	GB	0005.0	0005.5	10.1	71.0			QL=6 ST=2 TYP=5
	8800	MANI	3	S	0005.0	0006.0	2.9	82.8	27.6		
	8800	PALE	47	GB	0005.1	0005.5	8.7	81.0			QL=6 ST=2 TYP=5
	2695	MANI	3	S	0005.1	0005.9	2.7	20.8	6.9		
	2695	PALE	8	S	0005.3	0005.6	1.7	18.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0005.3	0005.8	2.0	11.0			QL=6 ST=2 TYP=3
	2695	MANI	3	S	0048.5	0048.7	1.3	36.0	8.7		
	8800	LEAR	8	S	0048.6	0049.0	1.2	10.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0048.6	0049.1	1.2	21.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0227.3	0235.8	13.7	18.0			QL=6 ST=2 TYP=2
	8800	ATHN	4	S/F	0640.1	0642.6	7.9	25.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0649.6	0655.5	57.7	50.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0649.8	0652.6	55.2	13.0			QL=6 ST=2 TYP=3
	8400	BERN	41	F	1003.0	1022.9	60.0U	59.0			
	8800	ATHN	4	S/F	1021.1	1023.3	15.2	41.0			QL=6 ST=3 TYP=3
	8800	SGMR	8	S	1022.6	1022.8	.2	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1135.0	1235.0	280.0	13.4	6.7		
	8800	ATHN	4	S/F	1155.1	1156.5	2.7	13.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1155.6	1155.8	.9	26.0			QL=6 ST=2 TYP=3
	8400	BERN	41	F	1222.0	1223.3U	2.0	14.0U			
	8800	SGMR	8	S	1222.1	1222.3	.4	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1222.5	1223.0	2.6	9.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	1434.3	1434.6	1.2	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1545.0	1546.2	7.0	8.6	4.0		
	2800	OTTA	240	R	1620.0	1644.0	24.0	3.8	1.9		
	8800	SGMR	8	S	1716.1	1716.1	.2	32.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1716.8	1717.0	.3	47.0			QL=6 ST=2 TYP=3
	2695	SGMR	47	GB	1719.8	1720.1	.5	51.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1738.6	1738.8	.2	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1815.0	1821.5	20.0	18.0	5.0		
	2695	SGMR	4	S/F	1818.5	1820.3	4.8	41.0			QL=6 ST=2 TYP=3
	2800	OTTA	23	GRF	1840.0	1905.0	140.0	20.4	9.6		
	8800	PALE	8	S	1856.6	1857.3	2.0	37.0			QL=6 ST=2 TYP=3
	8800	SGMR	20	GRF	1856.6	1906.0	13.4	51.0			QL=6 ST=2 TYP=2
	2695	SGMR	47	GB	1856.8	1857.6	23.7	26.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	1857.0	1857.5	1.5	6.6	3.3		
	2800	OTTA	3	S	1902.5	1906.0	11.0	77.0	28.4		
	8800	PALE	47	GB	1903.3	1906.0	12.3	60.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1904.0	1906.1	6.8	70.0			QL=6 ST=2 TYP=5
	2800	OTTA	260	FAL	2210.0	2245.0	35.0	-6.2	-3.1		
	8800	LEAR	47	GB	2329.3	2331.6	3.0	97.0			QL=5 ST=2 TYP=5
	2695	PENT	4	S/F	2329.5	2331.5	3.5	19.0	8.0		
	8800	MANI	4	S/F	2329.5	2332.0	3.2	134.0	44.7		
	2695	LEAR	4	S/F	2329.6	2331.6	2.7	27.0			QL=5 ST=2 TYP=3
	8800	PALE	47	GB	2330.0	2331.6	6.0	89.0			QL=6 ST=2 TYP=5
24	8800	LEAR	47	GB	0206.3	0206.8	1.3	83.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0206.6	0206.8	1.4	83.0			QL=6 ST=2 TYP=5
	8800	LEAR	8	S	0232.5	0232.8	1.8	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0303.3	0303.8	1.8	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0307.6	0308.3	2.7	16.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0410.6	0412.0	7.0	62.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0411.0	0411.8	8.8	56.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
24	2695	PALE	47	GB	0411.1	0412.1	3.4	83.0			QL=6 ST=2 TYP=5
	2695	MANI	3	S	0411.5	0412.5	6.0	57.0	19.0		
	8800	MANI	3	S	0411.5	0412.5	2.0	22.8	7.6		
	8800	ATHN	4	S/F	0414.6	0416.0	3.5	35.0			QL=2 ST=2 TYP=3
	2695	PALE	8	S	0415.6	0416.0	1.9	33.0			QL=6 ST=2 TYP=3
	8800	MANI	3	S	0420.0	0424.6	6.5	167.2	55.7		
	2695	MANI	3	S	0420.6	0425.0	5.9	234.0	78.0		
	8800	LEAR	8	S	0444.6	0444.8	.2	17.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	0520.0	0524.4	30.0U	147.0			
	2695	LEAR	4	S/F	0521.0	0523.3	4.8	36.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0521.5	0523.3	11.1	68.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	0525.3	0529.0	27.0	110.0			QL=6 ST=3 TYP=5
	2800	OTTA	1	S	1129.0	1129.2	1.5	6.0	2.6		
	2800	OTTA	240	R	1150.0	1250.0	60.0	4.0	2.0		
	2800	OTTA	20	GRF	1340.0	1455.0	200.0	6.0	3.6		
	2800	OTTA	1	S	1725.0	1726.2	2.0	2.6	1.3		
	2800	OTTA	21	GRF	1900.0	2305.0	360.0D	29.0			
	2800	OTTA	46F	C	1913.5	1926.6	60.0	74.0	26.0		
	2695	SGMR	20	GRF	1923.8	1926.3	4.8	50.0			QL=6 ST=2 TYP=2
	2695	PALE	4	S/F	1940.3	1943.6	5.7	49.0			QL=6 ST=2 TYP=3
	2695	SGMR	20	GRF	1942.5	1943.6	2.3	47.0			QL=6 ST=2 TYP=2
	8800	SGMR	20	GRF	1942.6	1943.6	1.2	22.0			QL=6 ST=2 TYP=2
	2800	OTTA	20	GRF	2035.0	2100.0	40.0	6.4	3.6		
	2800	OTTA	3	S	2253.0	2259.0	9.0	15.6	6.0		
	8800	PALE	4	S/F	2254.1	2255.1	14.0	24.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	2256.6	2258.3	2.5	22.0			QL=6 ST=2 TYP=3
	2695	PALE	4	S/F	2257.1	2258.8	3.0	23.0			QL=6 ST=2 TYP=3
	8800	PALE	4	S/F	2309.3	2310.3	3.3	32.0			QL=6 ST=2 TYP=3
	2695	PENT	1	S	2310.0	2311.0	4.5	6.0	2.6		
	2695	PENT	1	S	2323.0	2324.5	4.0	3.4	1.7		
25	8800	LEAR	8	S	0506.8	0507.0	.3	5.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0522.5	0531.6	53.6	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0530.0	0531.3	6.3	48.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0530.3	0531.5	5.3	16.0			QL=6 ST=2 TYP=3
	8400	BERN	41	F	0956.7	0957.1	4.0U	44.0			
	8400	BERN	4	S/F	1045.5	1047.6	8.0	133.0			
	8800	SGMR	47	GB	1045.6	1047.5	5.7	119.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1045.8	1047.5	2.8	42.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1655.5	1655.9	1.0	5.4	2.7		
	2800	OTTA	29	PBI	1656.5	1656.5	14.0	2.4	1.2		
	2800	OTTA	21	GRF	1939.0	1942.0	11.0	3.6	2.5		
	2800	OTTA	3	S	1943.5	1944.3	1.8	51.0	25.0		
	2695	SGMR	8	S	1943.6	1944.3	1.0	40.0			QL=6 ST=2 TYP=3
	2695	PALE	47	GB	1943.8	1944.3	1.8	51.0			QL=6 ST=2 TYP=5
	8800	SGMR	8	S	1943.8	1944.6	.8	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	31	ABS	1950.0	2015.0	50.0	-5.0	-3.0		
	2800	OTTA	22	GRF	2050.0	2100.0	25.0	3.0	1.5		
	8800	SGMR	8	S	2055.8	2056.0	.2	19.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	2055.8	2056.0	.2	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	2131.0	2134.6	14.0	320.0	105.0		
	8800	SGMR	47	GB	2131.1	2134.1	11.4	590.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	2131.8	2134.3	11.0	300.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	2132.8	2134.5	8.0	239.0			QL=6 ST=2 TYP=5
	8800	PALE	49	GB	2133.1	2134.3	6.5	600.0			QL=6 ST=2 TYP=6
	2800	OTTA	29	PBI	2145.0	2145.0	95.0	25.0	9.0		
26	8800	LEAR	4	S/F	0014.6	0014.8	2.7	13.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	0043.8	0046.3	13.8	370.0			QL=3 ST=2 TYP=5
	8800	MANI	22	GRF	0044.0	0047.0	14.5	351.5	117.2		
	2695	PENT	46F	C	0044.0	0049.5	21.0	182.0	69.4		
	2695	PALE	47	GB	0045.8	0047.8	11.8	169.0			QL=3 ST=2 TYP=5
	2695	MANI	22	GRF	0046.0	0050.0	12.5	166.6	55.5		
	2695	PENT	29	PBI	0105.0	0105.0	23.0	14.6	7.3		
	2695	PENT	31	ABS	0122.0	0135.0	30.0	7.2	4.4		
	2695	LEAR	4	S/F	0206.0	0208.1	2.8	40.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0206.5	0208.1	4.0	38.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0918.6	0920.3	4.7	29.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0918.8	0920.3	5.5	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0919.3	0920.6	1.8	30.0			QL=5 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JUNE 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
26	2695	LEAR	8	S	0919.8	0920.1	.5	22.0			QL=5 ST=2 TYP=3
	2695	ATHN	47	GB	0938.8	0940.6	4.5	84.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	0939.3	0940.1	3.8	100.0			QL=6 ST=2 TYP=5
	2695	MANI	3	S	0939.8	0941.0	2.2	88.5	29.5		
	2695	PENT	32	ABS	1325.0	1352.0	55.0	-6.6	-3.3		
	2800	OTTA	21	GRF	1909.0	1931.0	260.0	26.0	12.0		
	2800	OTTA	4	S/F	1909.5	1912.5	9.5	435.0	174.0		
	8800	PALE	49	GB	1909.8	1912.1	19.3	930.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1909.8	1912.1	18.0	660.0			QL=6 ST=2 TYP=6
	2695	SGMR	47	GB	1909.8	1912.3	18.0	500.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1909.8	1912.3	19.3	470.0			QL=6 ST=2 TYP=5
	2800	OTTA	29	PBI	1919.0	1919.0	10.0	14.6			
27	2800	OTTA	21	GRF	1720.0	1906.0	480.0D	21.0			
	2800	OTTA	21	GRF	1924.0	1937.0	50.0	16.2	8.1		
	2800	OTTA	1	S	1925.5	1927.5	4.5	6.4	3.2		
	2800	OTTA	1	S	2039.0	2040.0	7.0	4.8	2.4		
	2800	OTTA	21	GRF	2039.0	2105.0	60.0	3.2	1.8		
28	2800	OTTA	20	GRF	1305.0	1420.0	235.0	5.4	2.7		
	2695	PENT	20	GRF	2325.0	0000.0	120.0	4.2	2.2		

Observatories:

BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
LEAR = Learmonth ATHN = Athens PALE = Palehua

Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset on Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burstise Storm
48 Major
49 Major +

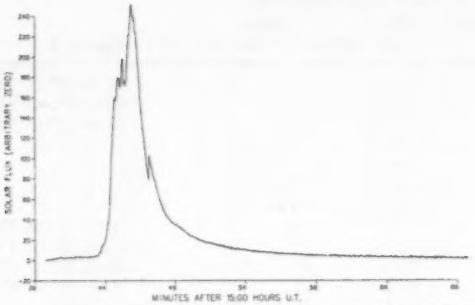
52
Jun 82

SELECTED SOLAR NOISE BURSTS

JUNE 2 - 6, 1982

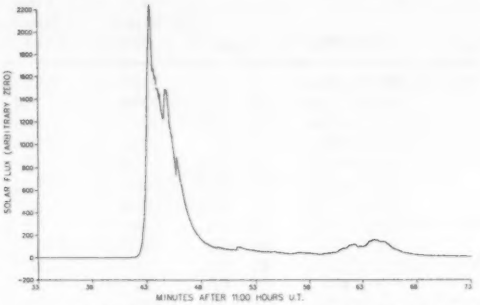
JUNE 02, 1982

SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



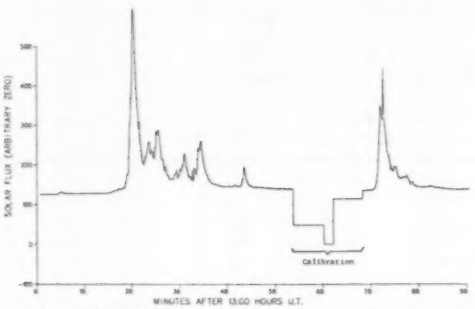
JUNE 03, 1982

SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



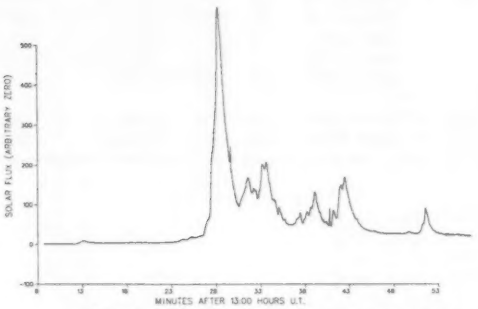
JUNE 04, 1982

SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



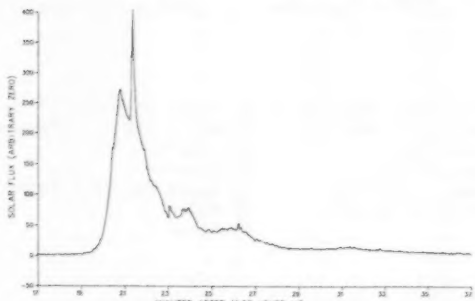
JUNE 04, 1982

SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



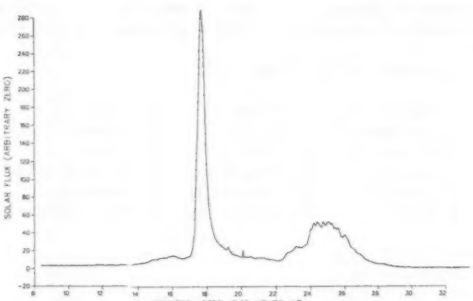
JUNE 04, 1982

SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



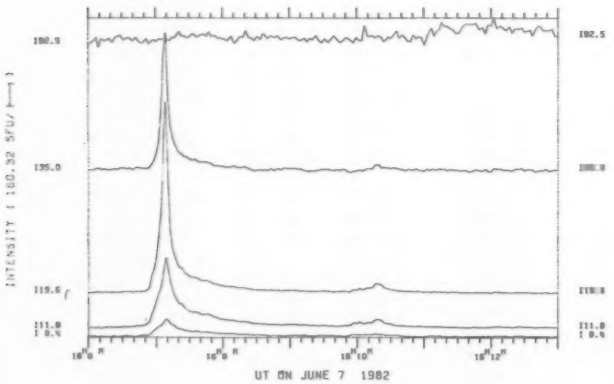
JUNE 04, 1982

SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



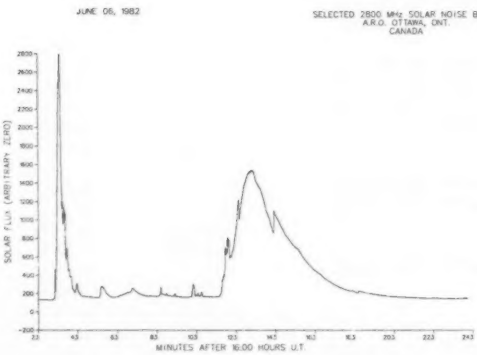
INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND

INTEGRATION TIME= 2000 MS



JUNE 06, 1982

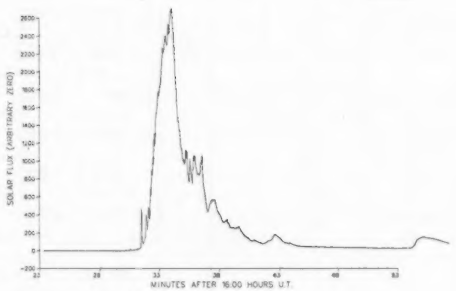
SELECTED 2800 MHz SOLAR NOISE BURST
A.R.O. OTTAWA, ONT.
CANADA



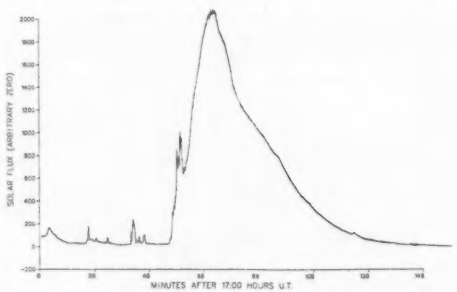
SELECTED SOLAR NOISE BURSTS

JUNE 6 - 15, 1982

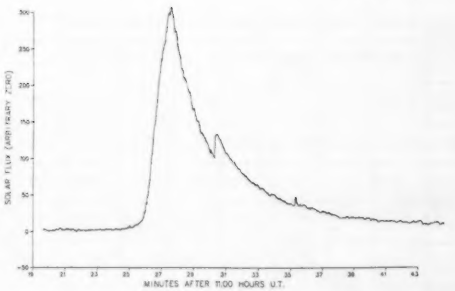
JUNE 06, 1982 — SELECTED 2800 MHz SOLAR NOISE BURST A.R.O. OTTAWA, ONT. CANADA



JUNE 06, 1982 — SELECTED 2800 MHz SOLAR NOISE BURST A.R.O. OTTAWA, ONT. CANADA



JUNE 09, 1982 — SELECTED 2800 MHz SOLAR NOISE BURST A.R.O. OTTAWA, ONT. CANADA



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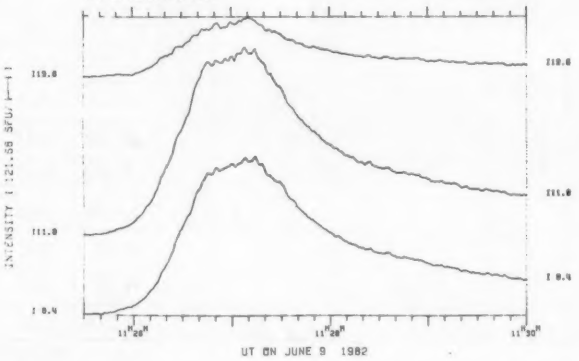
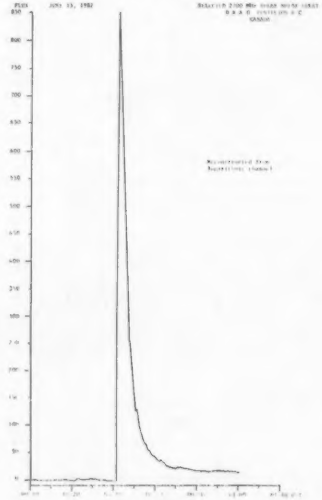
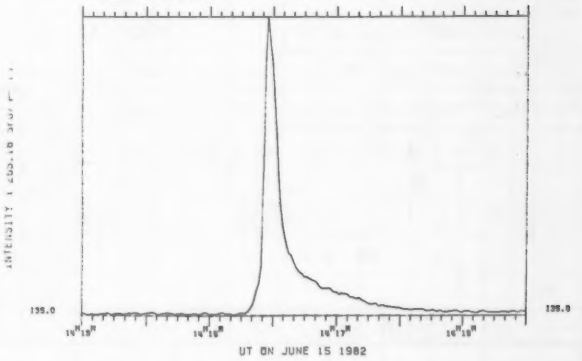
INTEGRATION TIME= 1000 MS





INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND

INTEGRATION TIME= 2000 MS



INFERRED IP MAGNETIC FIELD

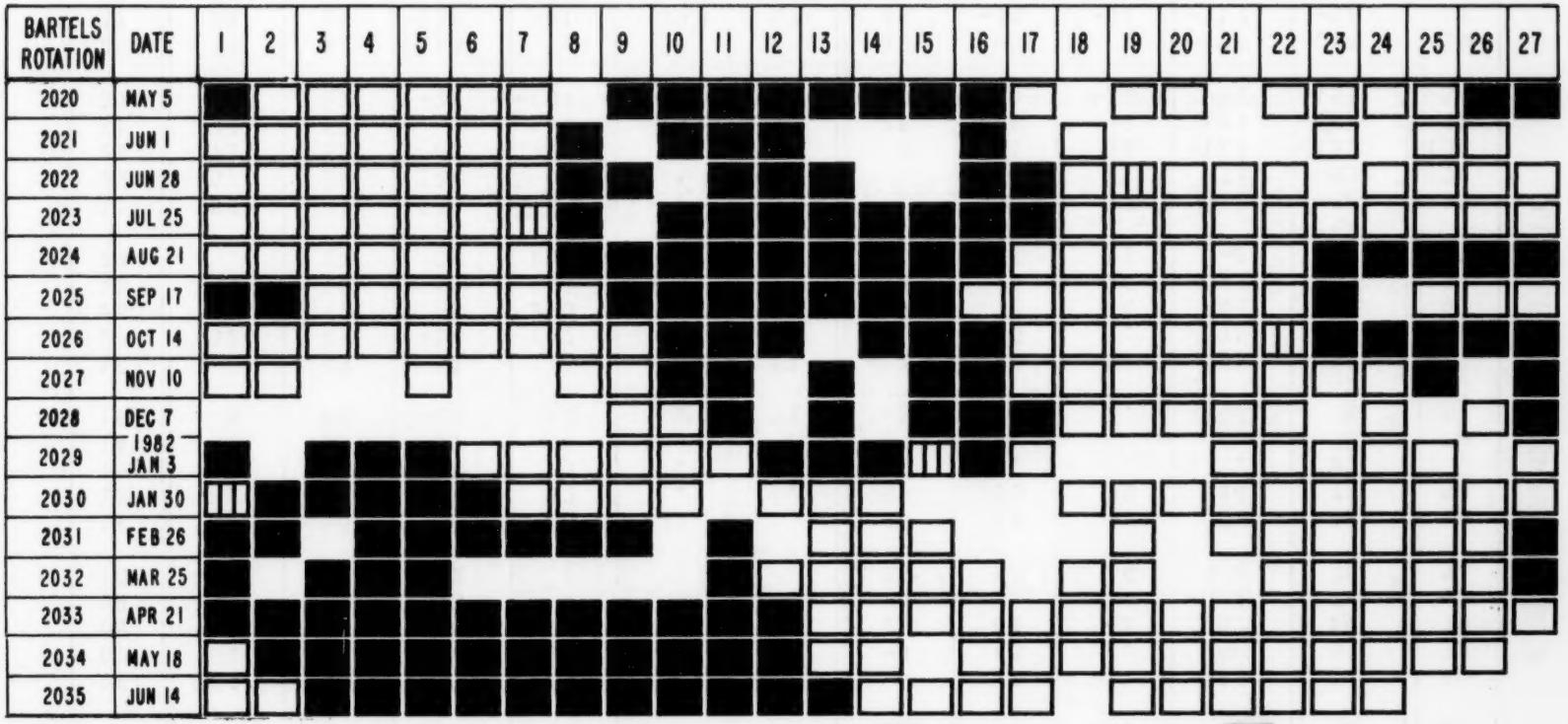
BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2015	DEC 26										-	-			-	TA -	TA -		-		-		-		-	AT	AT	-	-	-
2016	1981 JAN 22	TA -			AT	T*		-		-	AT	TA			TA					-					AT					TA
2017	FEB 18			AT	TA									TA	TA			*							AT		TA			TA
2018	MAR 17							AT						-					TA				AT	-	-		TA	AT	
2019	APR 13	TA	-	-	-	-					-				TA				*	AT	-		-		AT		-	-	
2020	MAY 10	-	-	-	-	TA	AT	TA		-	TA		TA									*	*						
2021	JUN 6			*							AT				TA			AT		-	-	-	-	-	-	-	-	-	-
2022	JUL 3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2023	JUL 30		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TA	-	TA	-	-	-	-	AT	-	-	-
2024	AUG 26	-	-		-	-	TA	-	TA	-	-	-	TA	-	-	TA	-	-	TA	-	-	-	-	TA	-	-	-	-	-
2025	SEP 22		-	-	-	-	-	-	-	AT	-	TA	-	TA	-	TA	-	TA	-	AT	-	-	TA	-	AT	-	TA	-	TA	-
2026	OCT 19	AT	-	TA	-	TA	-	-	-	TA	-	TA	-	-	-	-	TA	-	-	-	-	-	AT	-	TA	-	-	-	-
2027	NOV 15		-	-	-	-	AT	-	AT	-	-	-	-	-	-	-	TA	-	TA	-	TA	-	AT	-	-	-	AT	-	-
2028	DEC 12	TA	-		-	-	-	-	AT	-	AT	-	-	-	-	-	-	AT	-	AT	-	TA	-	-	-	-	TA	-	-	-
2029	1982 JAN 8		-	-	-	-	-	-	-	TA	-	TA	-	-	TA	-	-	TA	-	-	-	-	AT	-	-	-	-	AT	-	-	-
2030	FEB 4		-	-	-	-	TA	-	TA	-	TA	-	TA	-	-	-	TA	-	-	-	-	-	-	-	-	TA	-	-	-	TA
2031	MAR 3		-	-	-	-	-	-	-	TA	-	TA	-	TA	-	TA	-	-	-	TA	-	TA	-	-	-	-	-	-	AT	-
2032	MAR 30		-	TA	-	-	TA	-	-	-	-	TA	-	-	-	-	-	AT	TA	-	-	TA	-	-	-	-	-	-	-	-
2033	APR 26	-	-	AT	-	-	-	-	TA	-	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AT	-	AT	-	-
2034	MAY 23		-	-	-	AT	-	-	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TA	-
2035	JUN 19		-	-	-	-	-	-	-	-	-	-	-																	

▒ = definitely towards the sun □ = definitely away from the sun

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD



POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT

No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

	1981						1982					
day	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE
01	53	-49	-134	-27	94	41	15	-20	-19	.	-6	.
02	49	.	-87	11	82	34	-6	-44	-9	.	-6	33
03	41	-72	-56	70	55	49	-17	-29	-20	.	23	38
04	14	-80	-21	104	-1	-3	.	-3	-39	-17	43	54
05	-17	-67	-7	115	-19	.	-10	9	-44	3	48	80
06	-62	-48	11	104	-36	-12	-5	19	-21	38	16	82
07	.	-33	26	28	-29	.	-4	43	.	60	41	77
08	-93	-26	30	25	-23	.	25	64	-2	57	69	79
09	-56	-19	33	-7	-16	.	23	.	.	24	74	68
10	-43	-7	32	.	11	.	36	15	16	.	70	54
11	.	16	4	8	34	.	45	24	34	61	65	50
12	.	58	-29	32	.	.	35	33	35	46	79	58
13	-9	68	-47	43	.	.	16	.	.	.	82	.
14	-7	81	-37	64	105	.	-7	.	.	.	77	78
15	9	68	-24	103	.	57	-6	.	.	86	72	51
16	0	49	-32	115	.	17	-12	14	21	93	51	-13
17	38	49	-24	167	48	-5	-1	16	.	71	38	-51
18	59	42	-8	218	3	.	-3	5	4	46	27	-93
19	66	16	11	193	-28	-37	33	15	20	28	-15	-184
20	.	12	85	115	-45	.	.	27	31	-6	-57	-237
21	108	31	135	65	.	-39	.	38	25	-38	-68	-225
22	107	38	124	9	-65	-11	.	48	22	-78	-93	-170
23	73	52	60	-62	.	-2	9	41	14	-113	-132	-123
24	34	67	6	-107	-43	35	25	28	-2	-107	-158	-69
25	29	92	-79	-128	-20	4	35	10	-26	-93	-151	-56
26	34	64	-115	.	58	39	42	-3	.	-104	-118	-39
27	28	15	-138	-61	83	17	36	-34	-61	-117	-26	11
28	33	-12	-144	-60	96	29	.	.	-56	-122	-26	37
29	43	-64	-121	-19	59	.	15		-53	-77	-10	46
30	38	-84	-75	67	55	24	0		.	-26	19	59
31	1	-143		87		.	-10		.		46	

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

PIONEER XII (VENUS ORBITER)

Solar Wind

JUNE 1982

DATE Jun '82	TIME (UT)	ESV (°)	U_{H+} (km/s)	N_{H+} (H^+/cc)	T_{H+} (x10^6 K)
1	0332	080.	399.	22.6	0.13
2	0456		404.	30.5	.126
3	0703		652.	9.4	.168
4	0420		1081.	21.7	.3
5	0412		680.	9.	.26
6	0349		650.	8.3	.199
7	0403		772.	6.3	.356
8	0412		686.	9.4	.162
9	0703		601.	12.3	.275
10	0224		520.	15.6	.12
11	0347		498.	17.2	.257
12	0422		360.	55.6	.043
13	0409		413.	36.5	.12
14	0414		321.	31.4	.062
15	0430	089.	310.	25.	.085
16	0511		415.	25.4	.173
17	0650		451.	19.4	.239
18	0409		448.	13.6	.191
19	0416		331.	20.	.03
20	0450		360.	62.6	.118
21	0430		440.	24.7	.151
22	0335		493.	14.2	.251
23	1429		409.	26.2	.167
24	0325		344.	24.5	.039
25	0359		522.	28.5	.091
26	0324		355.	16.3	.036
27	0441		315.	27.	.054
28	0401		260.	9.4	.029
29	0204		383.	39.5	.024
30	2335		373.	38.2	.328

BOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

BOULDER GEOMAGNETIC SUBSTORM LOG

JUNE 1982

DATE	ONSET TIME	DIR	COMMENTS
06/01			Field active through 1100 UT. Field active at Polar Cap stations after 1700 UT.
	0320	East	
	0500	East	
	0625	East	
	0925		Localized SS College to Anchorage.
06/02			Field unsettled all day.
	0040		Boulder in partial Ring Current Sector.
	0245	East	
	0705	West	Several injections with recovery near 1000 UT.
06/03			Field intermittently unsettled.
	0310	East	
	0340	East	
	0600	West	
	0650	West	
06/04			Field intermittently unsettled with no distinctive SS activity.
06/05			Field slightly unsettled.
06/06	0243	SSC	Only unsettled field conditions follow with no distinctive SS activity.
06/07			Field unsettled all day.
	0620	West	
	0745		Localized SS College to Anchorage.
	0930	West	Several injections with recovery near 1130 UT.
06/08			Field unsettled after 1200 UT.
	1220		Localized SS College to Anchorage.
	1625		Localized SS Norman Wells to Inuvik.
06/09	0040	SSC	Moderately unsettled field conditions follow through 1500 UT with no distinctive SS activity.
06/10			Magstorm conditions between 0200-1700 UT.
06/11	0450	East	
	0700	West	
	1115		
	1750		Strong SS Polar Cap stations.
06/12	1442	SSC	Magstorm follows.
06/13			Magstorm conditions continue all day.
06/14			Field intermittently active.
	0350	East	
	0545	East	
	0750	West	Multiple injections with recovery near 1230 UT.
06/15			Field unsettled all day.
	0625	West	Moderate SS
	1315	West	Several minor injections with recovery near 1530 UT.
	1720		Polar Cap SS, Inuvik to Sachs Harbour.
06/16			Field unsettled all day.
	1300	West	
06/17			Field intermittently unsettled.
	0450	East	Several injections with recovery near 0700 UT.
	1040	West	Several minor injections with recovery near 1500 UT.
06/18			Field intermittently unsettled with no distinctive SS activity.
06/19			Field active after 0700 UT.
	0720	East	
	1310	West	Slow onset, numerous minor injections with recovery near 1800 UT.
	1810		Localized SS, Norman Wells to Inuvik.
06/20			Field unsettled all day.
	0730		Localized SS vicinity College.
	0815		Localized SS vicinity College.
	1510		Localized SS vicinity College.
06/21			Field intermittently unsettled.
	0615	East	
	0745		Weak SS, Norman Wells to Inuvik.
	1220		
06/22			Field unsettled all day with no distinctive SS activity.
06/23			Field slightly active through 1800 UT.
	0615	East	
06/24			Field unsettled all day.
	2105		Boulder in partial Ring Current Sector.
06/25			Field intermittently unsettled.
	0705	East	
06/26			Field intermittently unsettled with no distinctive SS activity.
06/27			Field intermittently active.
	0105	East	
	0640	West	
	0835	West	
	1205	West	
06/28			Field slightly active all day.
	0440	East	
	0950	West	Moderate SS
06/29			Field unsettled all day
	1025	West	Moderate SS
06/30			Field intermittently active along Auroral Oval.
	0210		Moderate positive Bays, H and D components, Boulder-Tucson.
	0505	= center	Strong response Boulder-Tucson.
	1110		Localized SS vicinity College.
	1720		Polar Cap SS, Inuvik to Cape Parry.

SGD 455 Part I (Prompt)

MAY 1982 DATA

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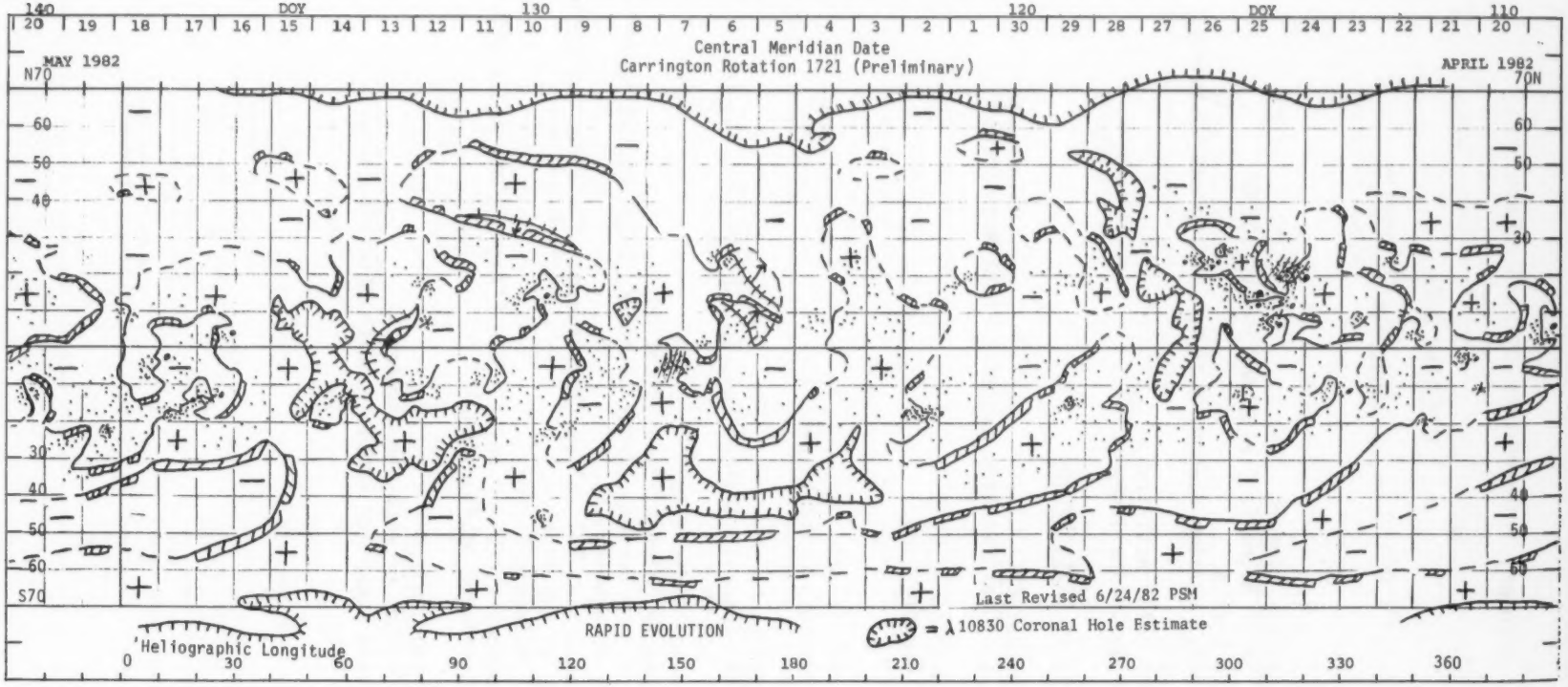
Hα SYNOPTIC CHART

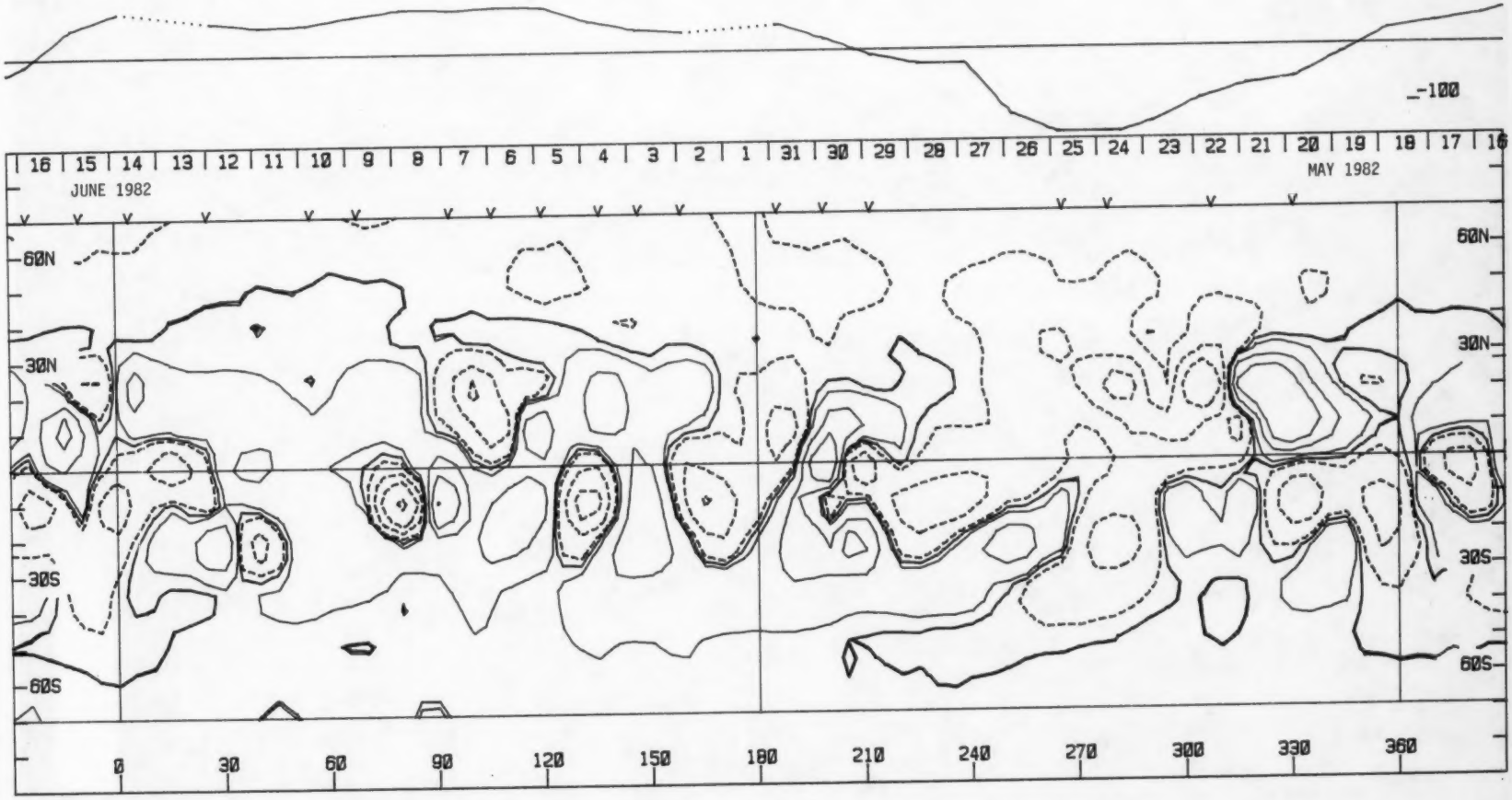
CARRINGTON ROTATION 1721 (PRELIMINARY)



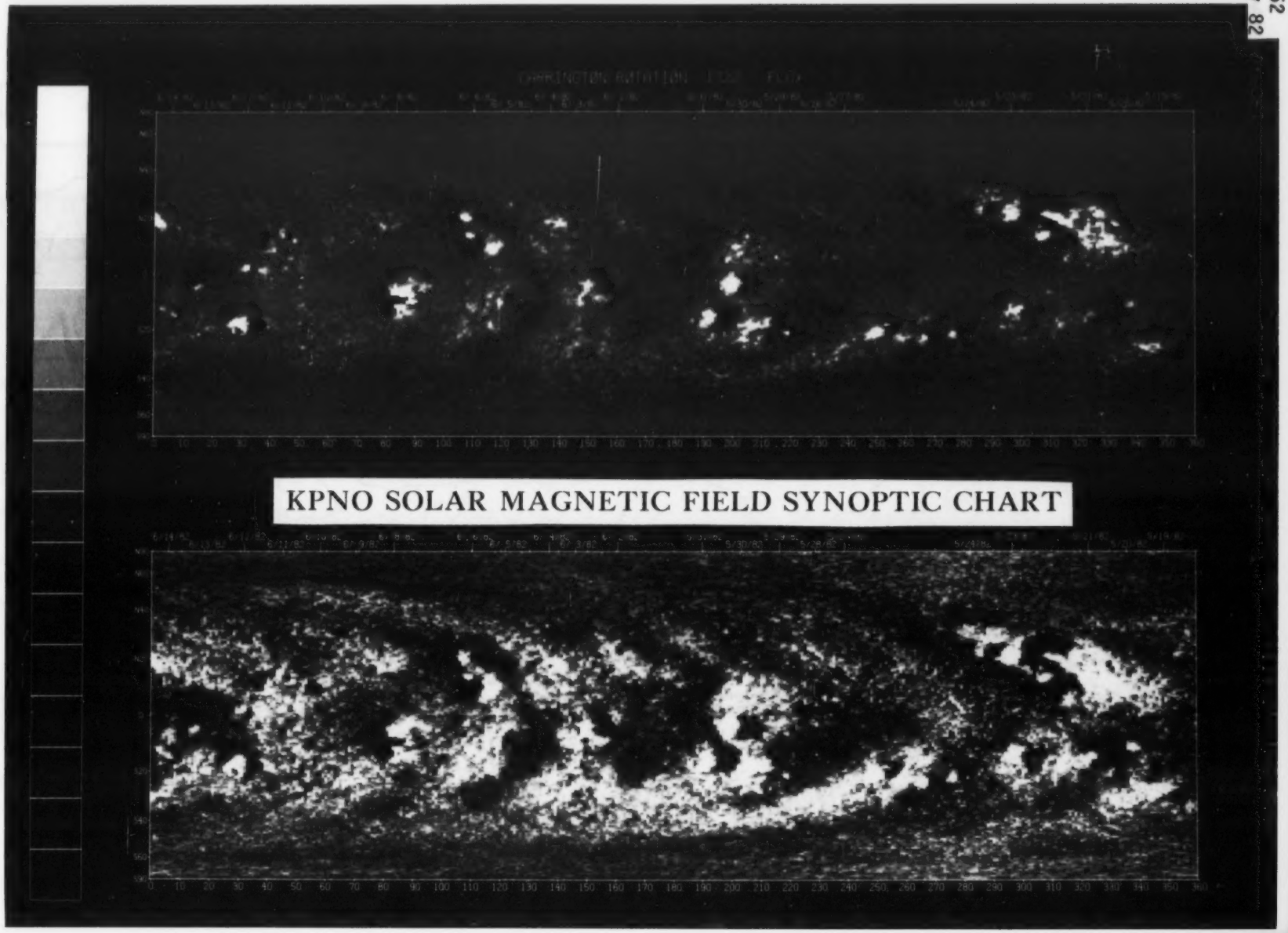
SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION 1722

Stanford Solar Observatory

0, ±100, 200, 500... μT

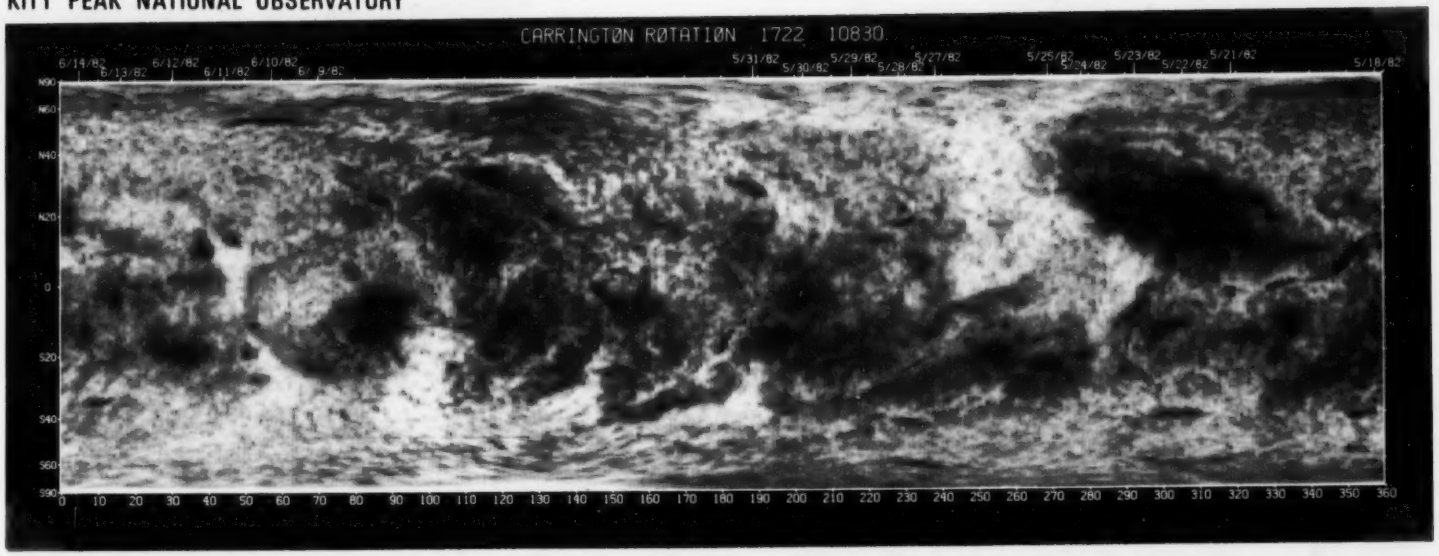


61
May 82


KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS
CARRINGTON ROTATION 1722

KITT PEAK NATIONAL OBSERVATORY



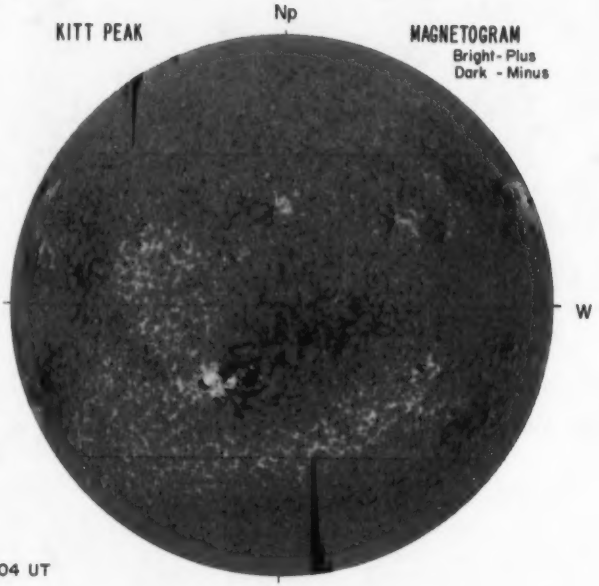
MAY 1, 1982 (P=-24.23, B_o=-4.17, L_o=235.21)

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA MAY 1,2,4,5,18,22,27 W

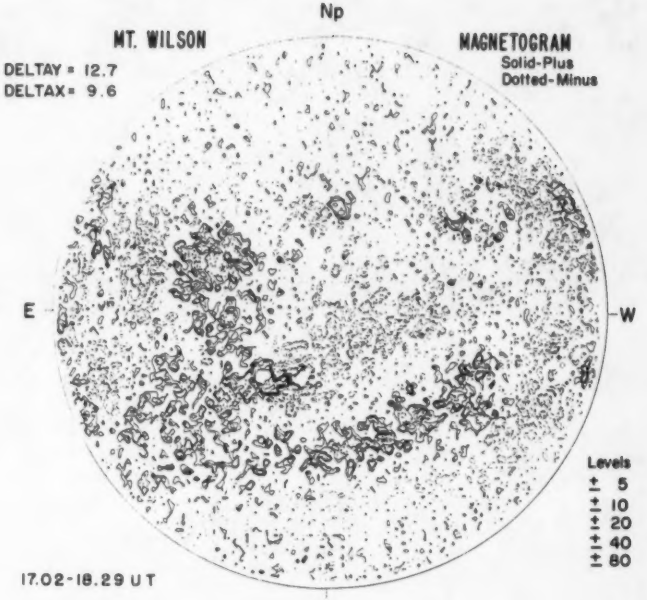
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

KITT PEAK MAGNETOGRAM
Bright-Plus
Dark - Minus



1504 UT

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.6

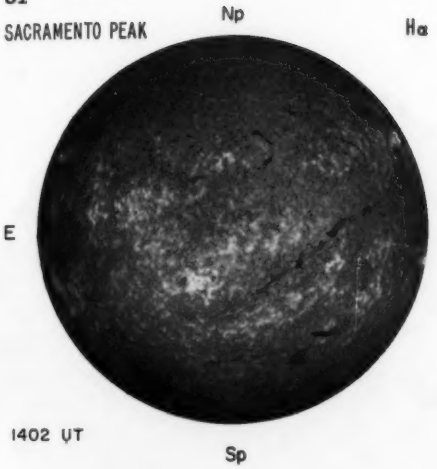


17.02-18.29 UT

01

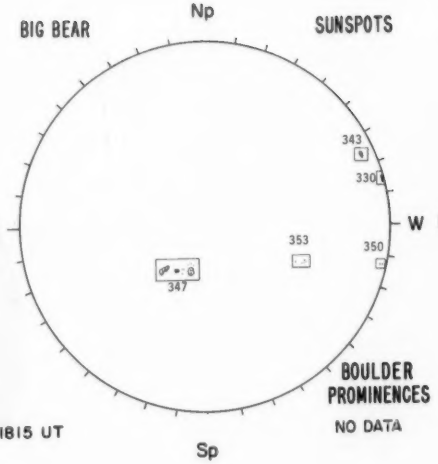
01

SACRAMENTO PEAK Hα



1402 UT

BIG BEAR SUNSPOTS

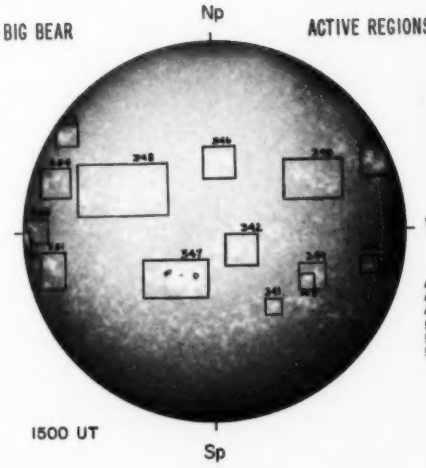


1815 UT

BOULDER PROMINENCES

NO DATA

BIG BEAR ACTIVE REGIONS

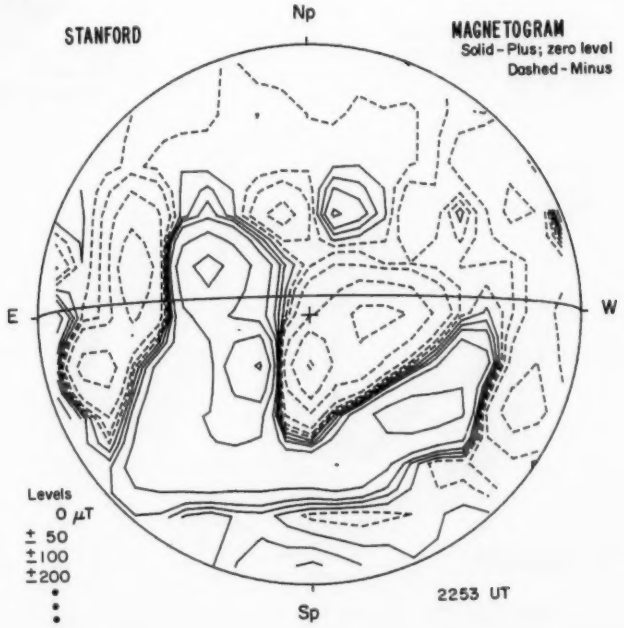


1500 UT

46- 0400-2.5
47- 2400-3.0
48- 1300-2.5
51- 0700-2.5
52- 0500-3.0
56- 0600-2.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



2253 UT

MAY 2, 1982 (P=-24.05, B_o=-4.07, L_o=222.00)

SACRAMENTO PEAK Np CORONA
5303 Å

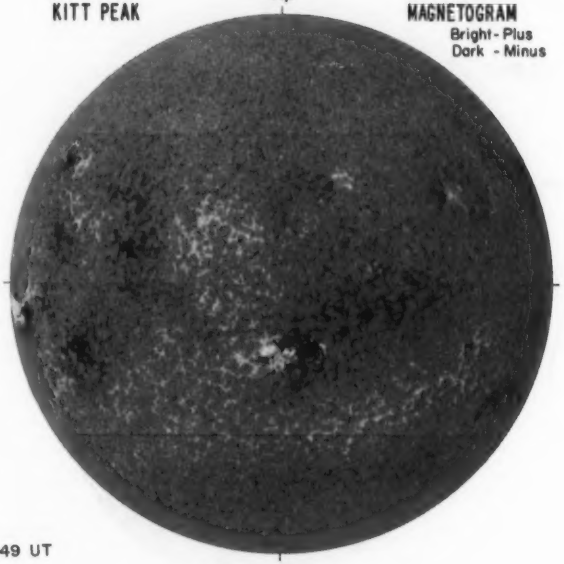
E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

KITT PEAK MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

1449 UT

Sp

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY =
DELTAX =

E NO DATA MAY 2,4,8,9,10,11,22,23,27,28 W

Levels
± 5
± ± 10
± ± ± 20
± ± ± ± 40
± ± ± ± ± 80

Sp

02

SACRAMENTO PEAK

Np

E NO DATA

Sp

Hα

BIG BEAR

Np

W E

1715 UT

Sp

SUNSPOTS

345 343 357 356 353 347

BOULDER PROMINENCES

NO DATA

BIG BEAR

Np

W E

1610 UT

Sp

ACTIVE REGIONS

42- 0400-2.5
45- 0500-2.5
47- 2600-3.0
48- 1500-2.5
51- 1700-2.5
52- 0500-3.0
56- 1200-2.5

STANFORD

Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E W

Levels
0 μT
± 50
±100
±200

2125 UT

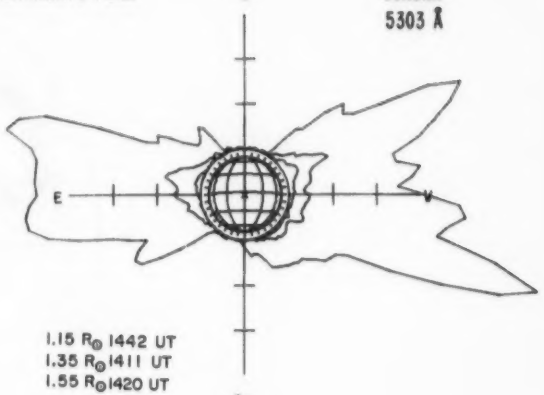
Sp

MAY 3, 1982 (P=-23.87, B_o=-3.97, L_o=208.78)

SACRAMENTO PEAK

Np

CORONA
5303 Å



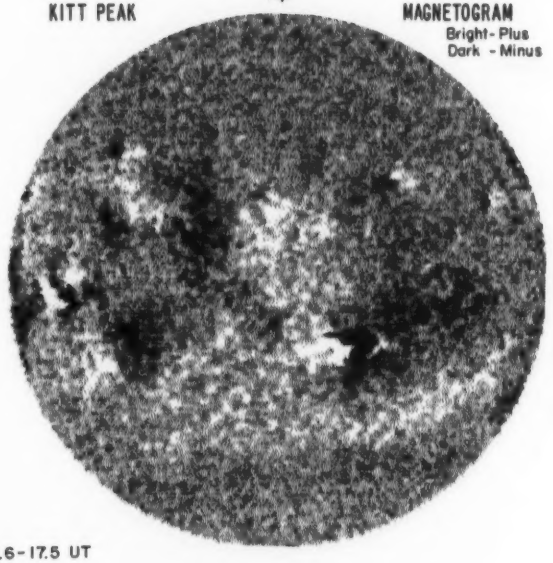
1.15 $R_\odot$ 1442 UT
1.35 $R_\odot$ 1411 UT
1.55 $R_\odot$ 1420 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



16.6-17.5 UT

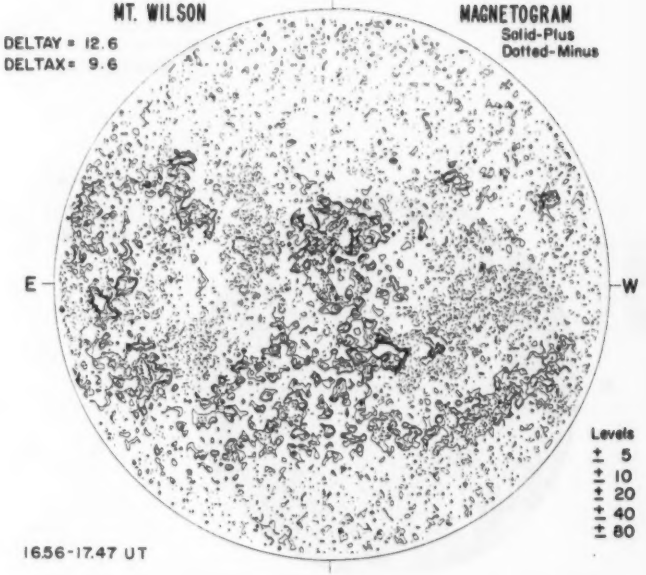
Sp

MT. WILSON

DELTAY = 12.6
DELTAX = 9.6

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus



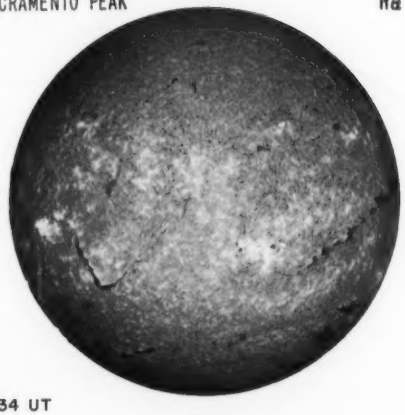
1656-17.47 UT

Sp

03

03

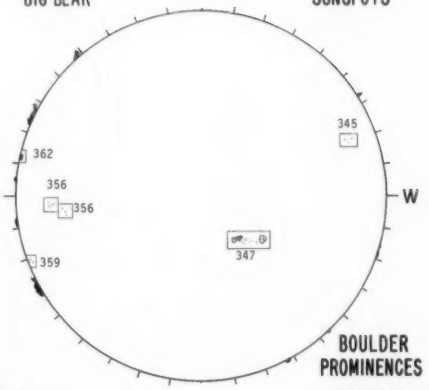
SACRAMENTO PEAK Np Hα



E W

1434 UT Sp

BIG BEAR Np SUNSPOTS



E W

1745 UT Sp

BIG BEAR Np ACTIVE REGIONS

E NO DATA MAY 3, 4, 5, 11, 13, 14, 20, 25, 28, 29, 30, 31 W

BOULDER PROMINENCES

1415 UT Sp

STANFORD Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E NO DATA MAY 3, 4, 5, 15, 16, 17, 18, 19, 21, 23, 26, 27, 28 W

Levels
0 μT
± 50
±100
±200
•
•
•

Sp

MAY 4, 1982 (P=-23.67, B_o=-3.87, L_o= 195.56)

SACRAMENTO PEAK Np CORONA 5303 Å

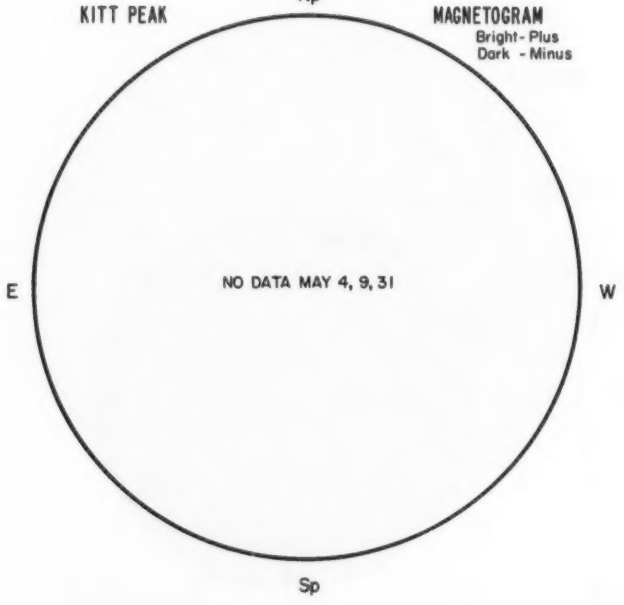
E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

KITT PEAK Np MAGNETOGRAM Bright - Plus Dark - Minus



MT. WILSON MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY =
DELTAX =

E NO DATA W

Sp

Levels
± 5
± 10
± 20
± 40
± 80

04

Np Np Np

04

SACRAMENTO PEAK

Np

E W

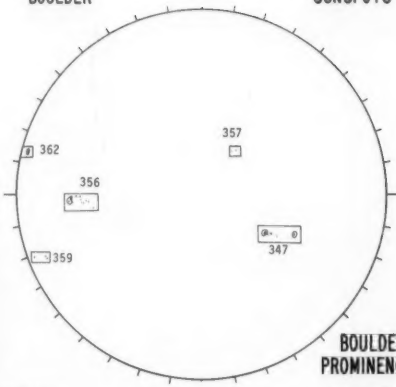
1555 UT

Sp

Hα

BOULDER

Np



E W

1530 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

NO DATA

BIG BEAR

Np

NO DATA

E W

Sp

ACTIVE REGIONS

STANFORD

Np

NO DATA

E W

Sp

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

Levels

0 μT

± 50

±100

±200

•

•

•

71

May 82

MAY 5, 1982 (P=-23.47, B_o=-3.76, L_o=182.34)

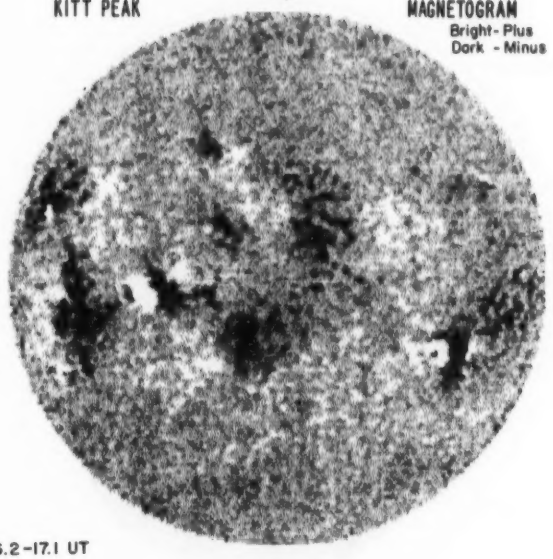
SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

KITT PEAK Np MAGNETOGRAM Bright-Plus Dork - Minus



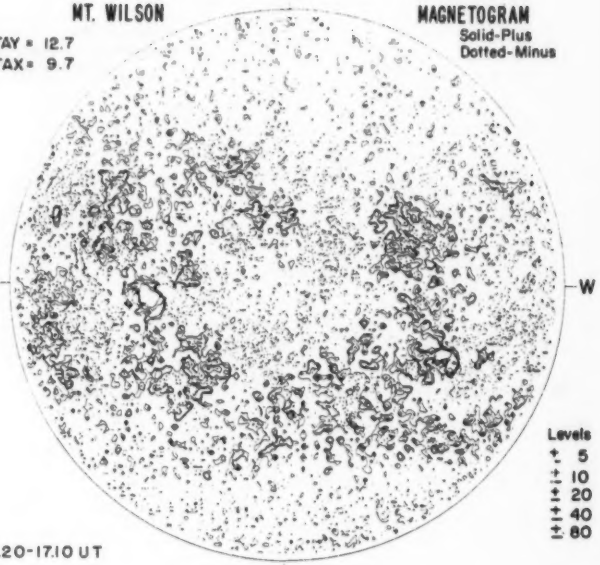
E W

16.2-17.1 UT

Sp

MT. WILSON Np MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY = 12.7
DELTAX = 9.7



E W

Levels
± 5
± 10
± 20
± 40
± 80

16.20-17.10 UT

Sp

05

Np Np Np

05

SACRAMENTO PEAK

Np

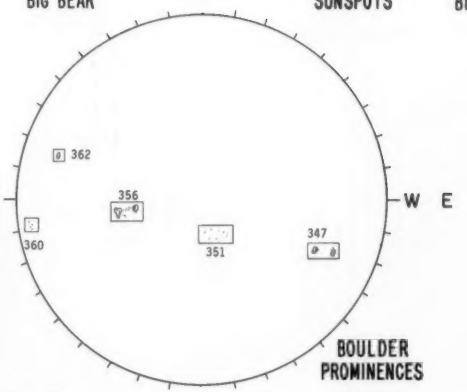
Hα

E NO DATA W

Sp

BIG BEAR

Np



2135 UT

E W E W E

Sp

SUNSPOTS

BOULDER PROMINENCES

NO DATA

BIG BEAR

Np

E NO DATA W

Sp

ACTIVE REGIONS

NO DATA

E W

Sp

STANFORD

Np

E NO DATA W

Sp

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

Levels

0 μT

± 50

±100

±200

•

•

•

73

May 82

MAY 6, 1982 (P=-23.27, B_o=-3.66, L_o=169.12)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$
1.35 $R_\odot$ 1700 UT
1.55 $R_\odot$ 1710 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1400 UT

Sp

Np

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6

E

W

Levels
± 5
± 10
± 20
± 40
± 60

16.32-17.23 UT

Sp

06

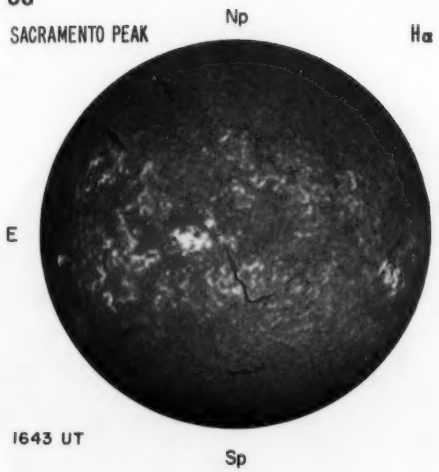
Np

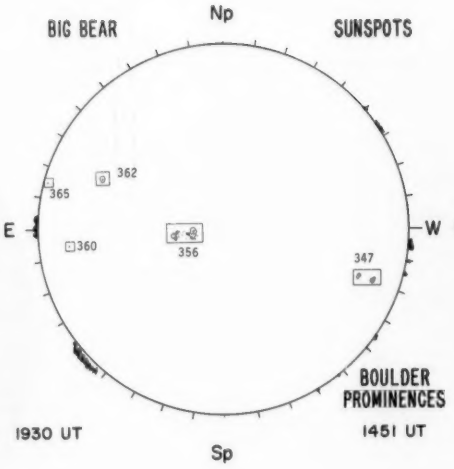
Np

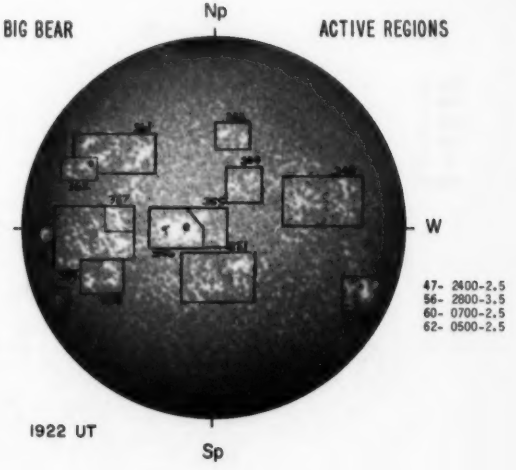
Np

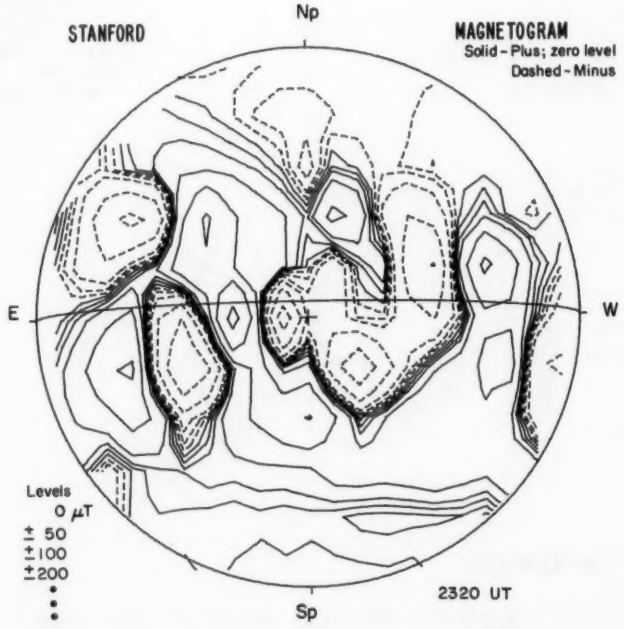
ACTIVE REGIONS

06


SACRAMENTO PEAK
Np
Hα
E
W
1643 UT
Sp


BIG BEAR
Np
SUNSPOTS
362
365
360
356
347
E
W
BOULDER
PROMINENCES
1930 UT
1451 UT
Sp


BIG BEAR
Np
ACTIVE REGIONS
E
W
47- 2400-2.5
56- 2800-3.5
60- 0700-2.5
62- 0500-2.5
1922 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2320 UT
Sp

75
May 82

MAY 7, 1982 (P=-23.05, B_o=-3.55, L_o=155.90)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1355 UT
1.35 $R_\odot$ 1335 UT
1.55 $R_\odot$ 1344 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1357 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6

E

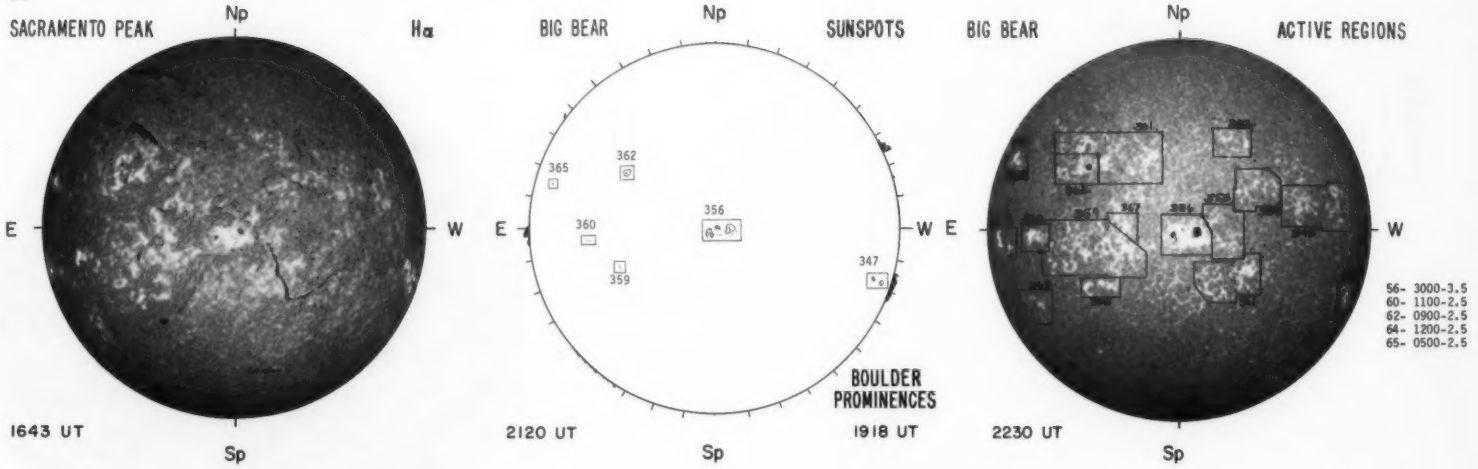
W

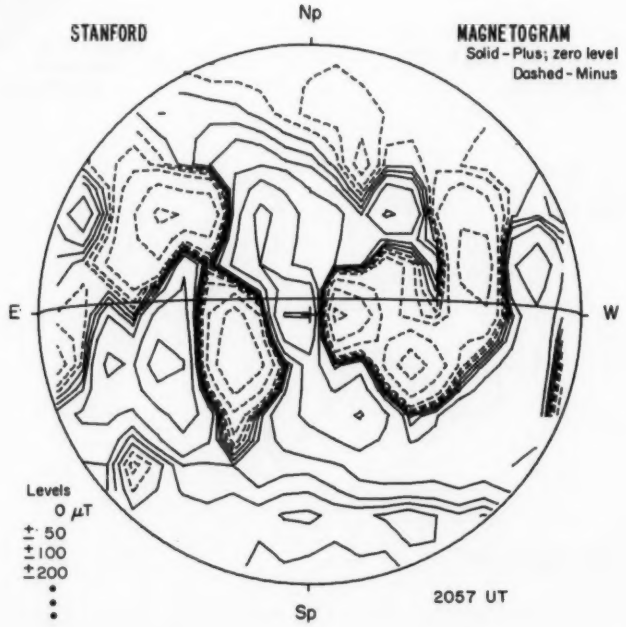
Levels
± 5
± 10
± 20
± 40
± 80

17.06-18.00 UT

Sp

07


SACRAMENTO PEAK
Np
Hα
E
W
1643 UT
Sp
BIG BEAR
Np
SUNSPOTS
365
362
360
356
359
347
E
W
2120 UT
Sp
BOULDER
PROMINENCES
1918 UT
BIG BEAR
Np
ACTIVE REGIONS
E
W
56- 3000-3.5
60- 1100-2.5
62- 0900-2.5
64- 1200-2.5
65- 0500-2.5
2230 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2057 UT
Sp

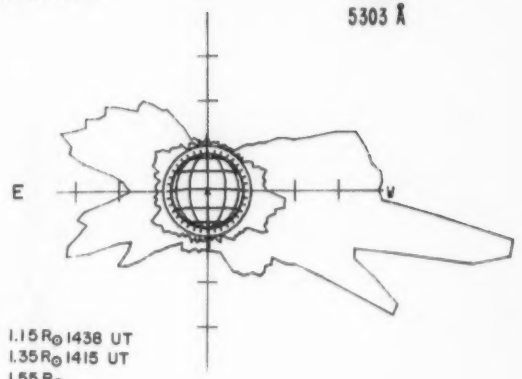
77
May 82

MAY 8, 1982 (P=-22.83, B_o=-3.44, L_o=142.68)

SACRAMENTO PEAK

Np

CORONA
5303 Å



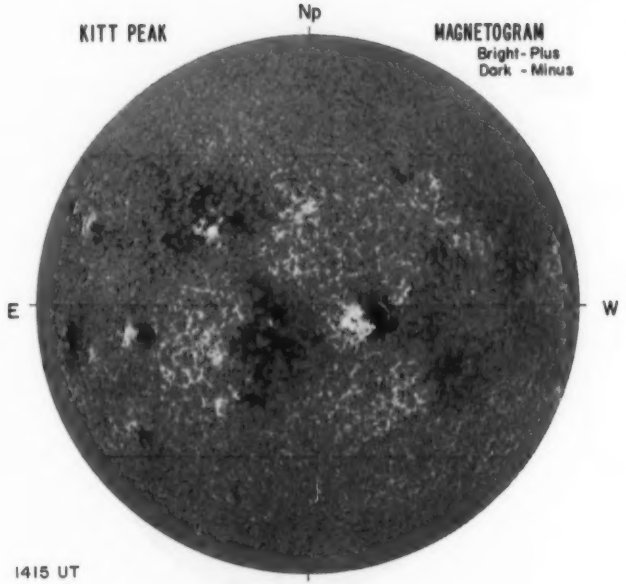
1.15 $R_\odot$ 1438 UT
1.35 $R_\odot$ 1415 UT
1.55 $R_\odot$

Sp

Np

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus



1415 UT

MT. WILSON

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

NO DATA

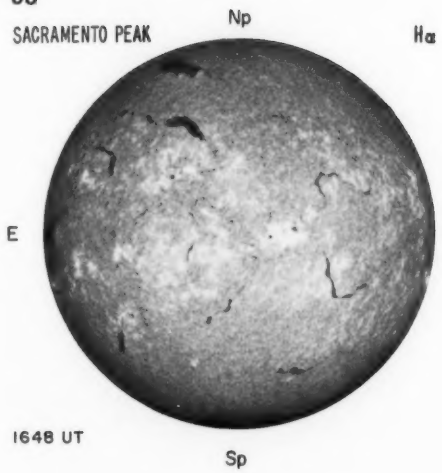
W

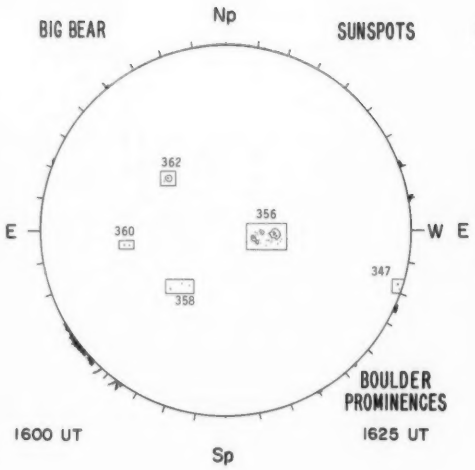
Levels
± 5
± 10
± 20
± 40
± 80

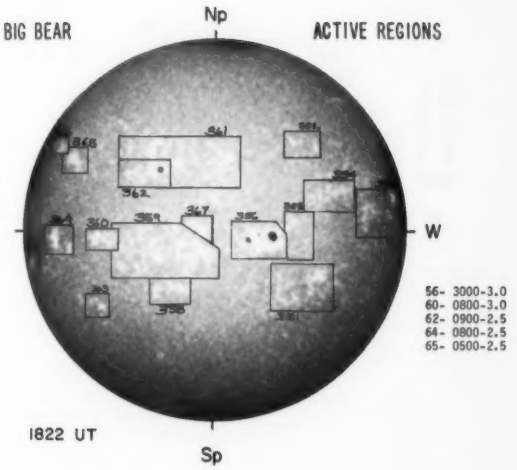
Sp

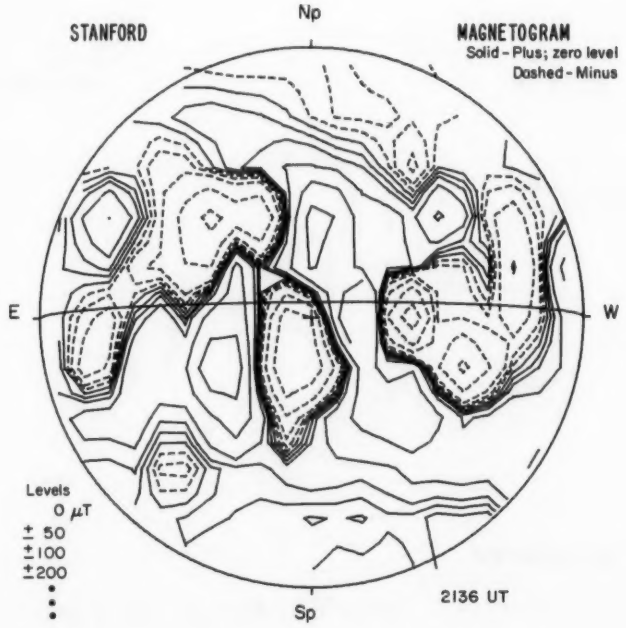
08

08


SACRAMENTO PEAK
Np
Hα
E
W
Sp
1648 UT


BIG BEAR
Np
SUNSPOTS
362
356
360
347
358
E
W
BOULDER
PROMINENCES
1600 UT
1625 UT
Sp


BIG BEAR
Np
ACTIVE REGIONS
E
W
Sp
1822 UT
56- 3000-3.0
60- 0800-3.0
62- 0900-2.5
64- 0800-2.5
65- 0500-2.5

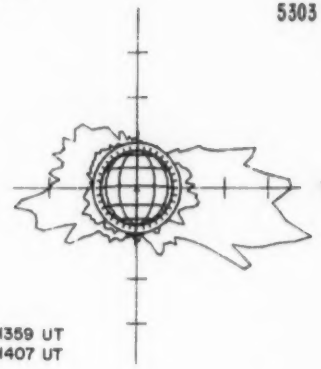

STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Sp
2136 UT
Levels
0 μT
± 50
±100
±200

MAY 9, 1982 (P=-22.60, B_o=-3.34, L_o= 129.46)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1359 UT
1.35 $R_\odot$ 1407 UT
1.55 $R_\odot$

Sp

Np

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

DELTAY =
DELTAX =

MT. WILSON

MAGNETOGRAM
Solid - Plus
Dotted - Minus

E

NO DATA

W

E

NO DATA

W

Levels
± 5
± 10
± 20
± 40
± 80

Sp

Sp

09

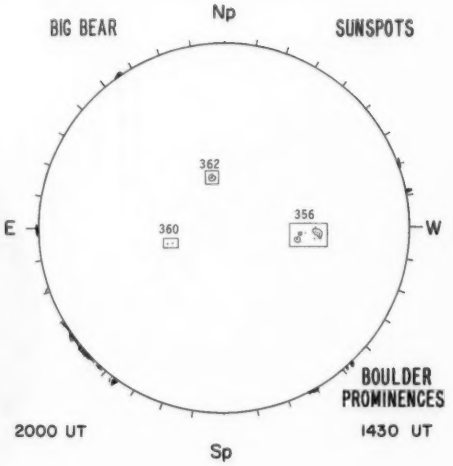
Np

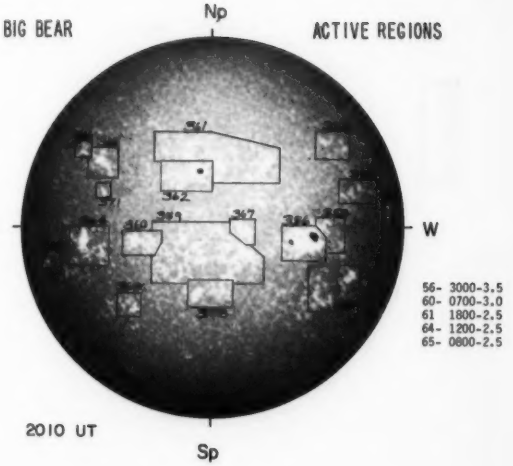
Np

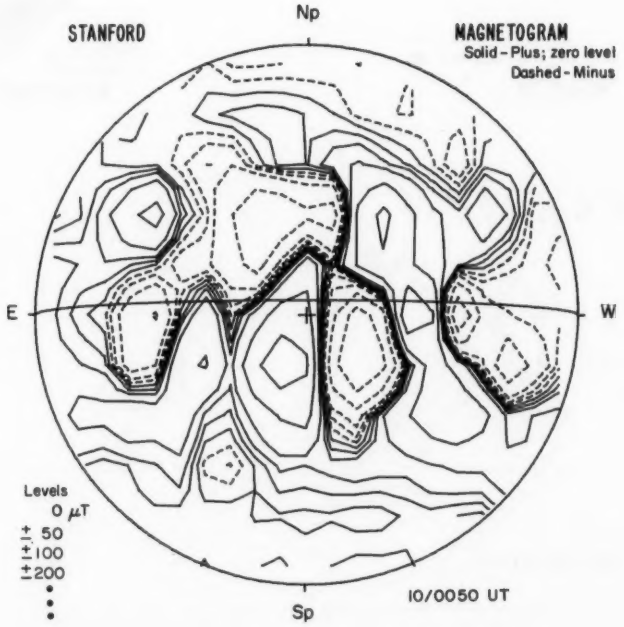
Np

09

SACRAMENTO PEAK
Np
Hα
E
W
1526 UT
Sp


BIG BEAR
Np
SUNSPOTS
362
360
356
E
W
BOULDER
PROMINENCES
2000 UT
1430 UT
Sp


BIG BEAR
Np
ACTIVE REGIONS
E
W
56- 3000-3.5
60- 0700-3.0
61 1800-2.5
64- 1200-2.5
65- 0800-2.5
2010 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
± 100
± 200
Sp
10/0050 UT

MAY 10, 1982 (P=-22.37, B_o=-3.23, L_o=116.24)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1404 UT
1.35 $R_\odot$ 1412 UT
1.55 $R_\odot$

Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1550 UT

Sp

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid - Plus
Dotted - Minus

E

NO DATA

W

Levels
± 5
± 10
± 20
± 40
± 80

Sp

10

SACRAMENTO PEAK

Np

BIG BEAR

Np

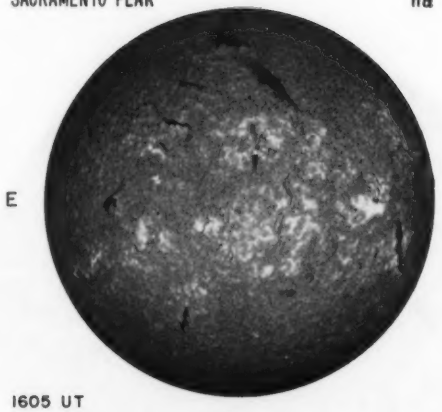
SUNSPOTS

BIG BEAR

Np

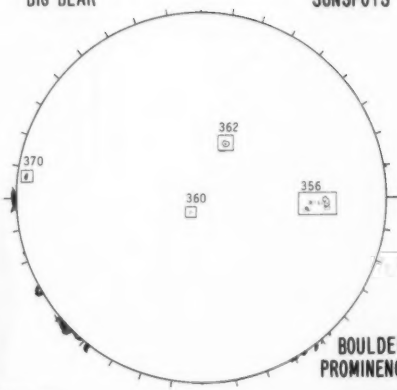
ACTIVE REGIONS

SACRAMENTO PEAK Hα



1605 UT

BIG BEAR SUNSPOTS

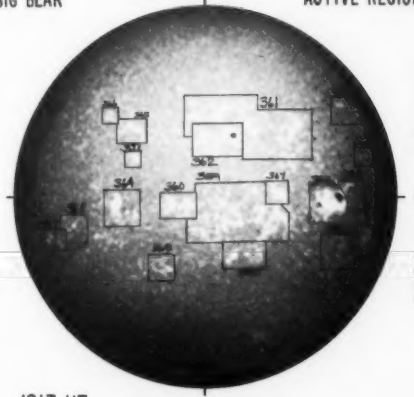


1820 UT

BOULDER PROMINENCES

1418 UT

BIG BEAR ACTIVE REGIONS

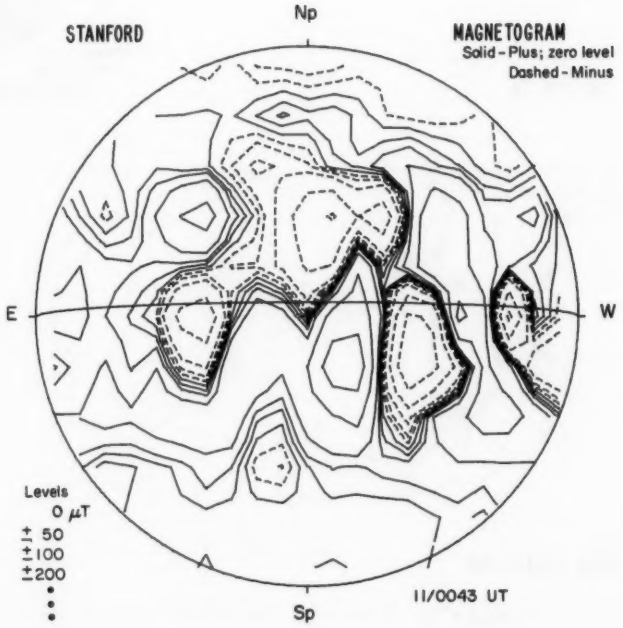


56- 2600-3.0
60- 0500-2.5
64- 1200-2.5
65- 0600-3.0

1817 UT

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



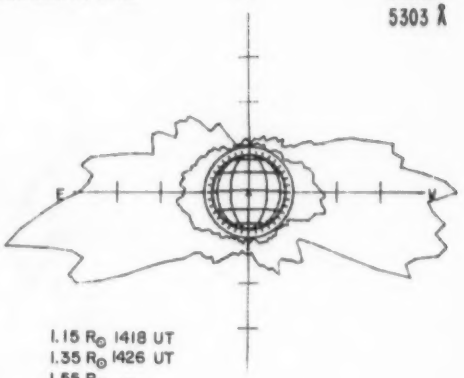
11/0043 UT

MAY 11, 1982 (P=-22.13, B_o=-3.12, L_o= 103.01)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1418 UT
1.35 $R_\odot$ 1426 UT
1.55 $R_\odot$

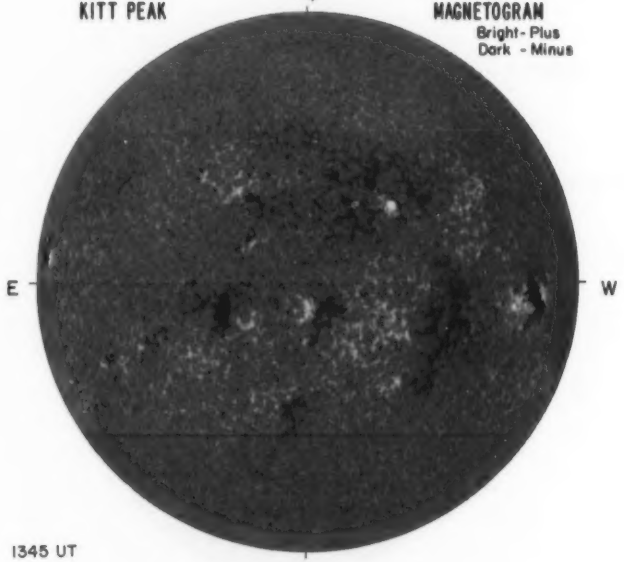
Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright-Plus
Dark - Minus



1345 UT

Sp

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

NO DATA

W

Levels
± 5
± ± 10
± ± ± 20
± ± ± 40
± ± ± 80

Sp

11

Np

Np

Np

SACRAMENTO PEAK Np Hα

E W E

1436 UT

Sp

BOULDER Np

NO DATA

Sp

SUNSPOTS BIG BEAR Np

W E

NO DATA

Sp

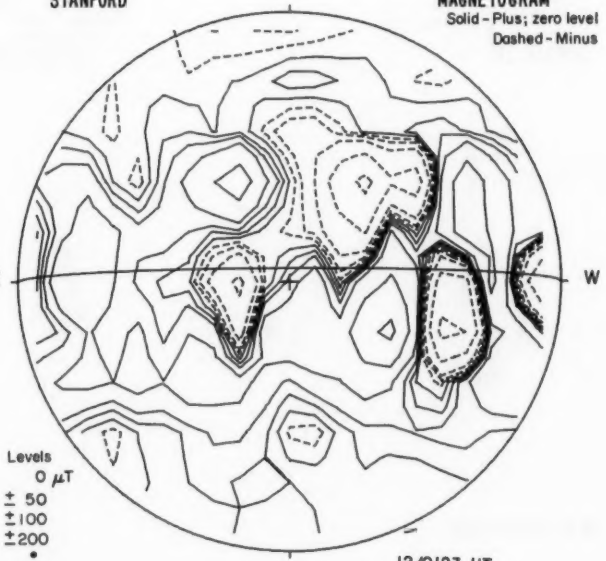
ACTIVE REGIONS

W

BOULDER PROMINENCES

STANFORD Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus



Sp

12/0123 UT

MAY 12, 1982 (P=-21.88, B_o=-3.01, L_o=89.79)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1409 UT
1.35 $R_\odot$ 1417 UT
1.55 $R_\odot$

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1804 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.6

E

W

Levels
± 5
± 10
± 20
± 40
± 80

17.88 - 18.78 UT

Sp

12

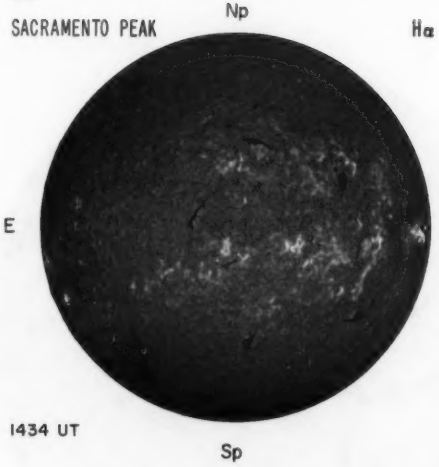
Np

Np

Np

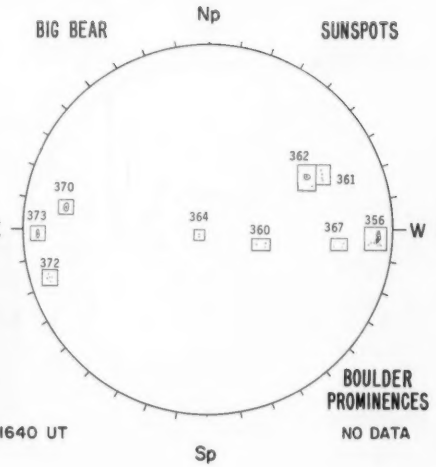
12

SACRAMENTO PEAK Hα



1434 UT

BIG BEAR SUNSPOTS

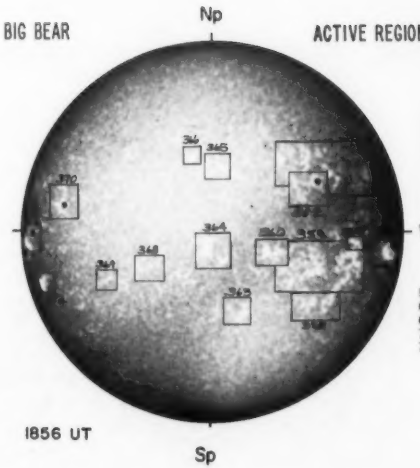


1640 UT

BOULDER PROMINENCES

NO DATA

BIG BEAR ACTIVE REGIONS

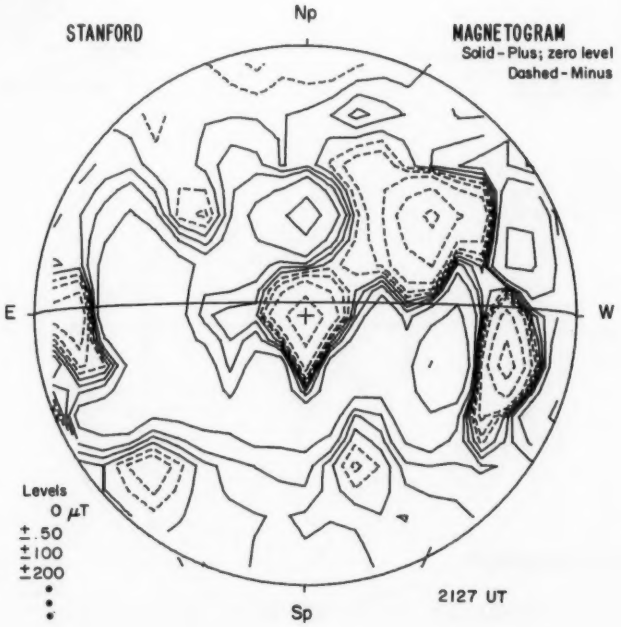


1856 UT

56- 2500-2.5
60- 0400-2.5
64- 1200-3.0
72- 0500-3.0
73- 1200-2.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



2127 UT

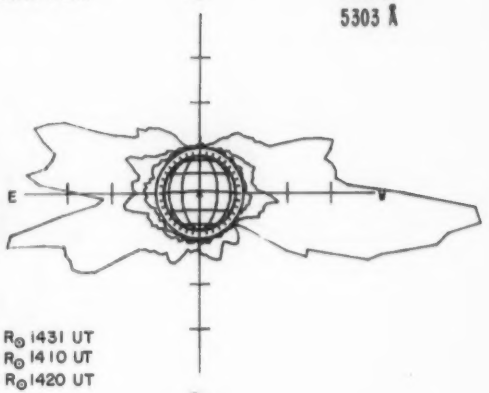
87
May 82

MAY 13, 1982 (P=-21.62, B_o=-2.90, L_o=76.56)

SACRAMENTO PEAK

Np

CORONA
5303 Å



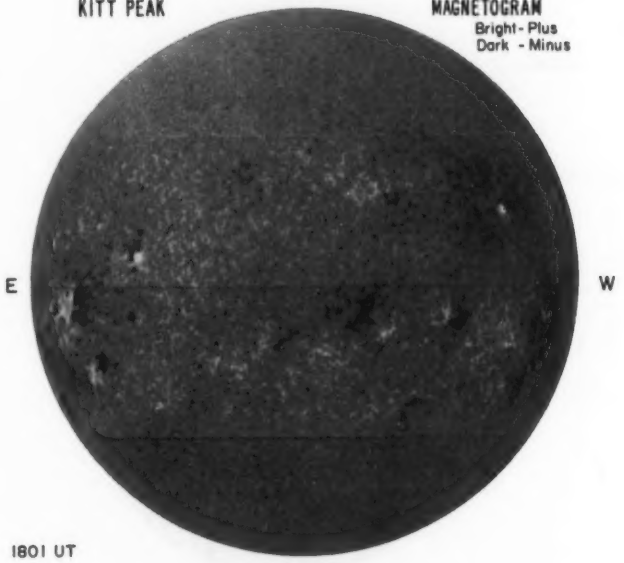
1.15 $R_\odot$ 1431 UT
1.35 $R_\odot$ 1410 UT
1.55 $R_\odot$ 1420 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1801 UT

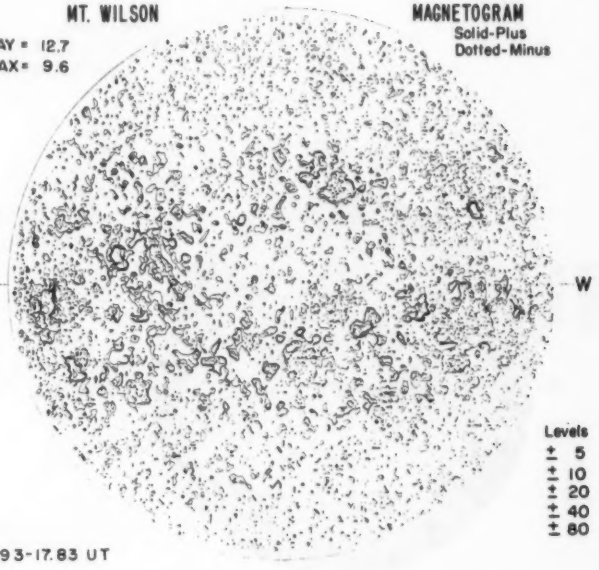
Sp

Np

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.6



16.93-17.83 UT

Sp

SACRAMENTO PEAK

Np

Hα

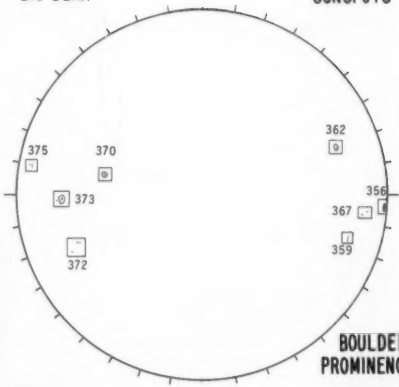
E W

1434 UT

Sp

BIG BEAR

Np



E W E

0018 UT

Sp

SUNSPOTS

BIG BEAR

BOULDER PROMINENCES

NO DATA

Np

ACTIVE REGIONS

NO DATA

W

Sp

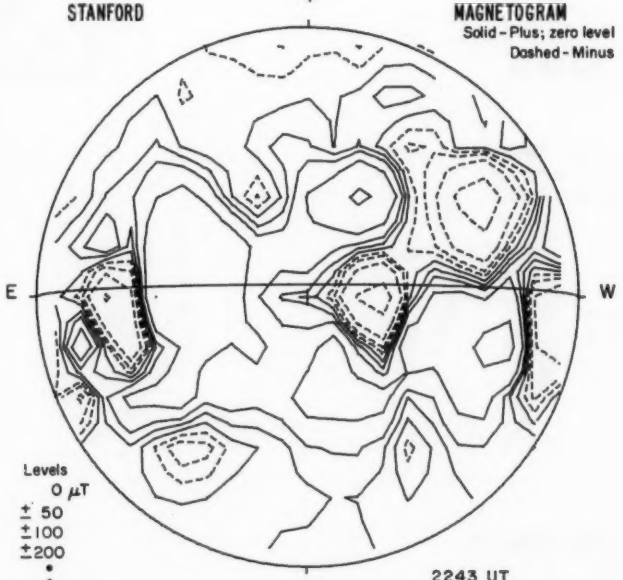
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

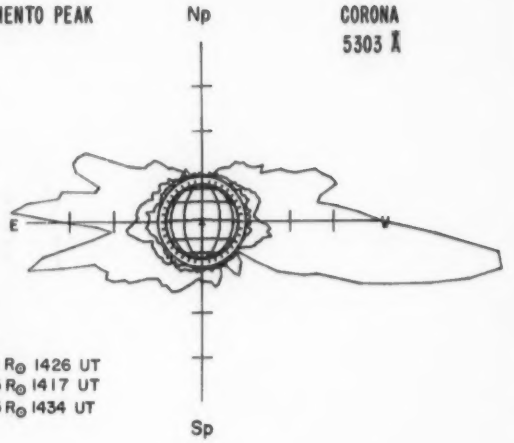


Sp

2243 UT

MAY 14, 1982 (P=-21.36, B_o=-2.78, L_o=63.34)

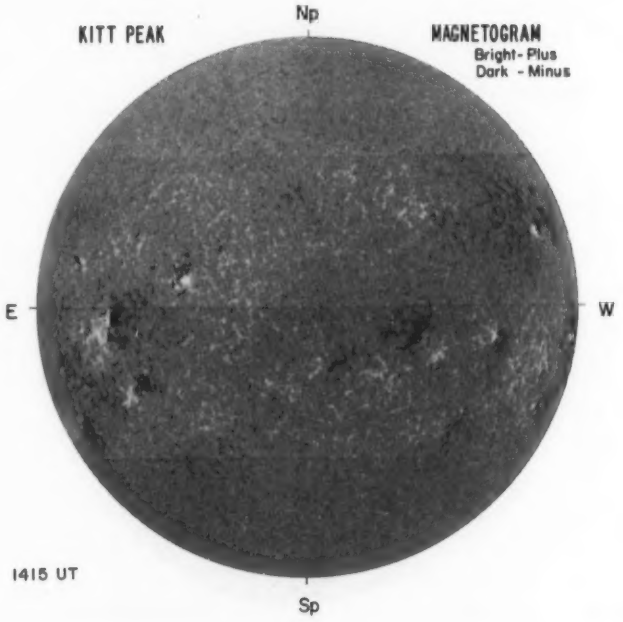
SACRAMENTO PEAK



CORONA
5303 Å

1.15 $R_\odot$ 1426 UT
1.35 $R_\odot$ 1417 UT
1.55 $R_\odot$ 1434 UT

KITT PEAK

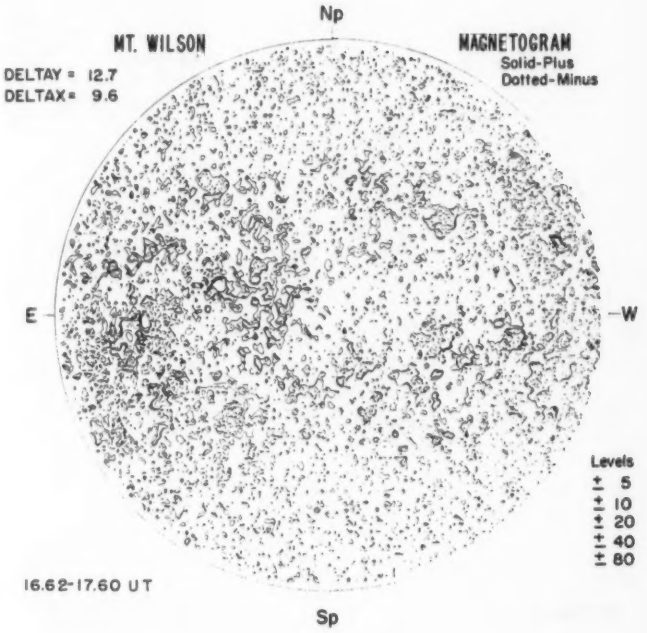


MAGNETOGRAM
Bright - Plus
Dark - Minus

1415 UT

MT. WILSON

DELTAY = 12.7
DELTAX = 9.6

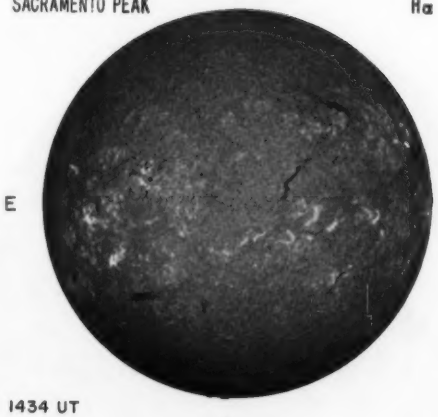


MAGNETOGRAM
Solid - Plus
Dotted - Minus

Levels
± 5
± 10
± 20
± 40
± 80

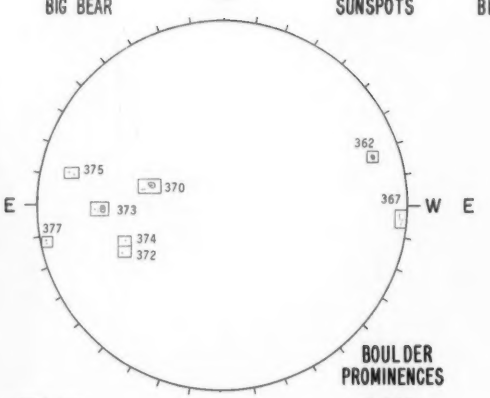
16.62-17.60 UT

SACRAMENTO PEAK Hα



1434 UT

BIG BEAR SUNSPOTS



1730 UT

BOULDER PROMINENCES

NO DATA

BIG BEAR ACTIVE REGIONS

NO DATA

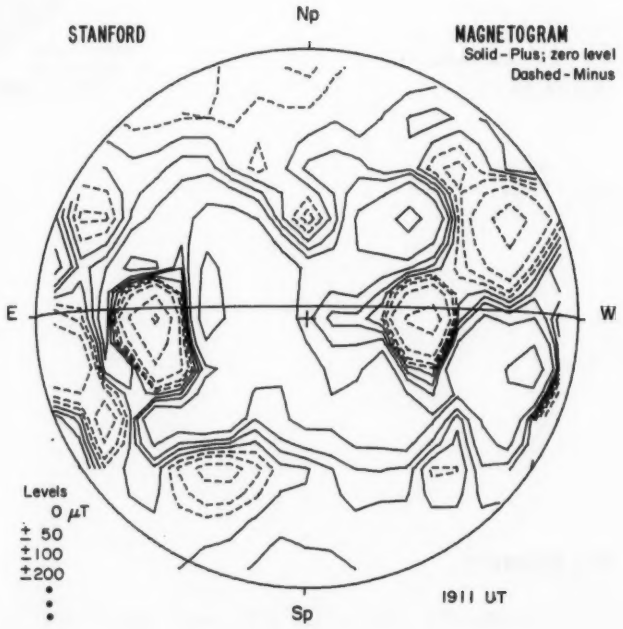
Np

Sp

STANFORD MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



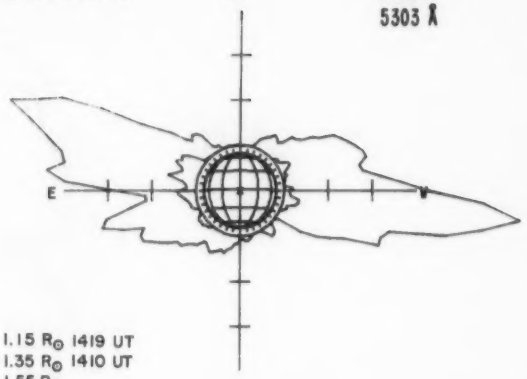
1911 UT

MAY 15, 1982 (P=-21.09, B_o=-2.67, L_o=50.11)

SACRAMENTO PEAK

Np

CORONA
5303 Å



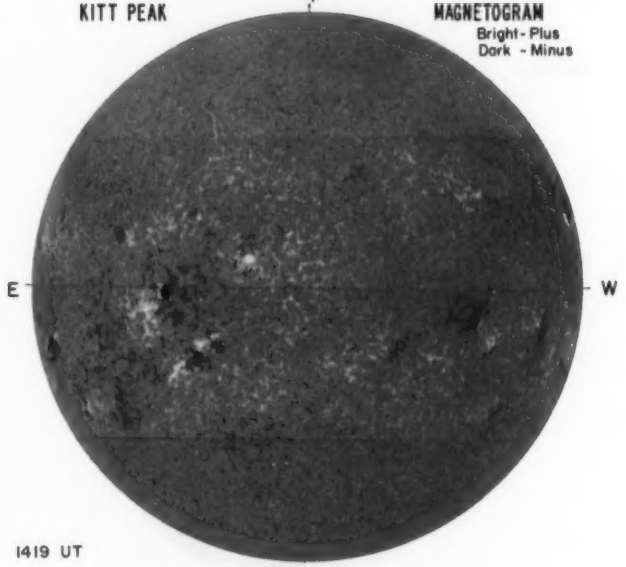
1.15 $R_\odot$ 1419 UT
1.35 $R_\odot$ 1410 UT
1.55 $R_\odot$

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1419 UT

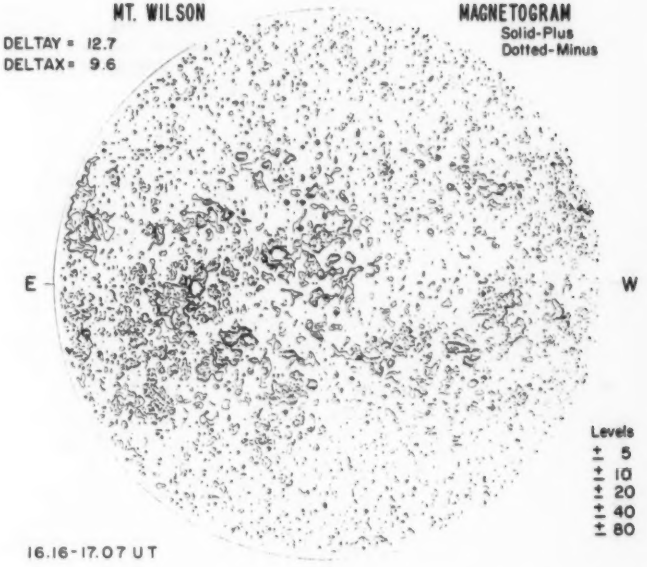
Sp

Np

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.6



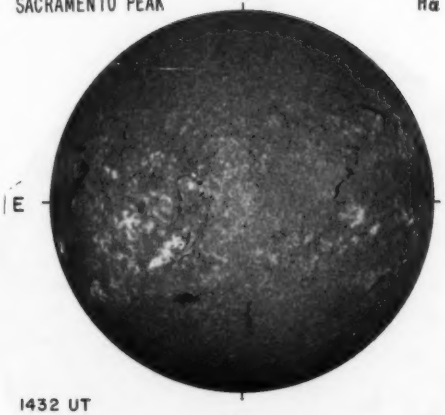
16.16-17.07 UT

Sp

15

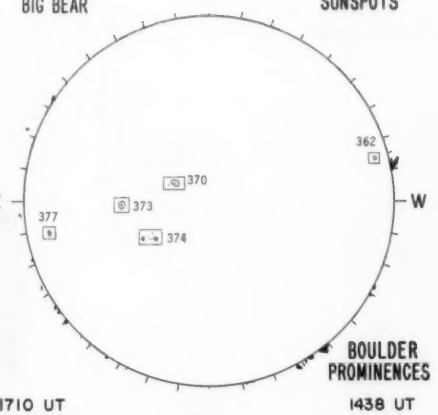
15

SACRAMENTO PEAK Hα



1432 UT

BIG BEAR SUNSPOTS

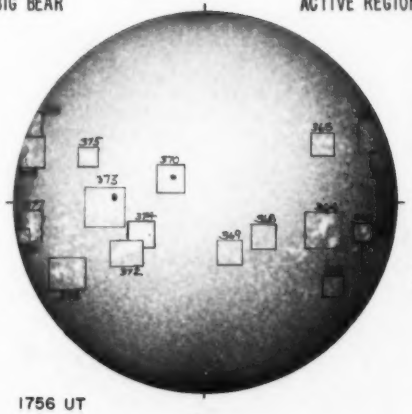


1710 UT

BOULDER PROMINENCES

1438 UT

BIG BEAR ACTIVE REGIONS



1756 UT

72- 0800-2.5
74- 1000-3.5
77- 0700-2.5

STANFORD MAGNETOGRAM

Np

Solid - Plus; zero level
Dashed - Minus

E NO DATA W

Levels
0 μT
± 50
±100
±200

Sp

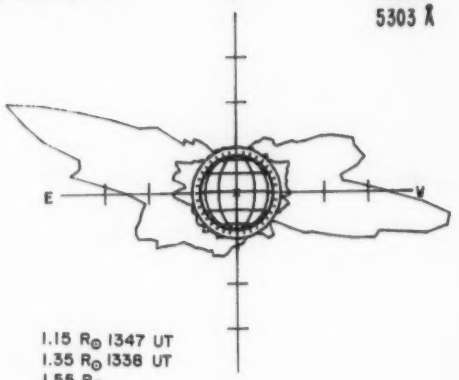
93
May 8

MAY 16, 1982 (P=-20.82, B_o=-2.56, L_o= 36.89)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1347 UT
1.35 $R_\odot$ 1338 UT
1.55 $R_\odot$

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

1427 UT

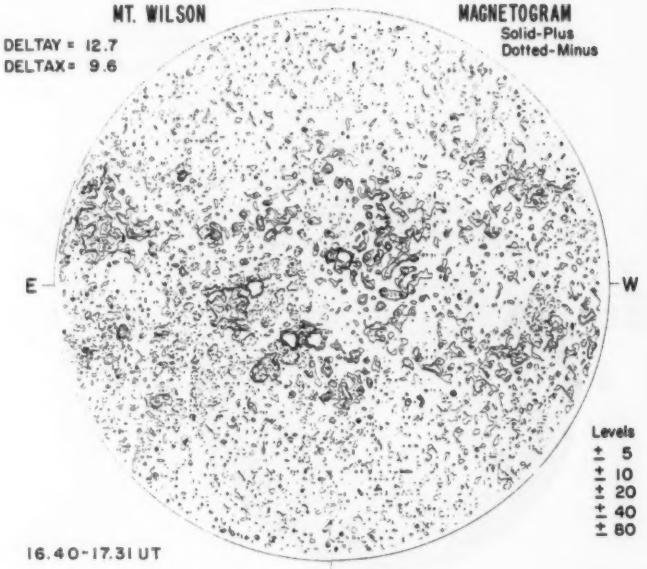
Sp

MT. WILSON

Np

DELTAY = 12.7
DELTAX = 9.6

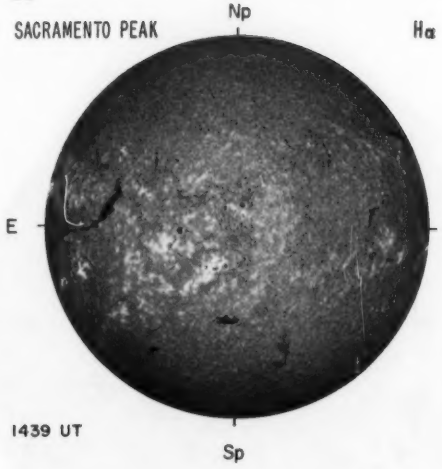
MAGNETOGRAM
Solid-Plus
Dotted-Minus



16.40-17.31 UT

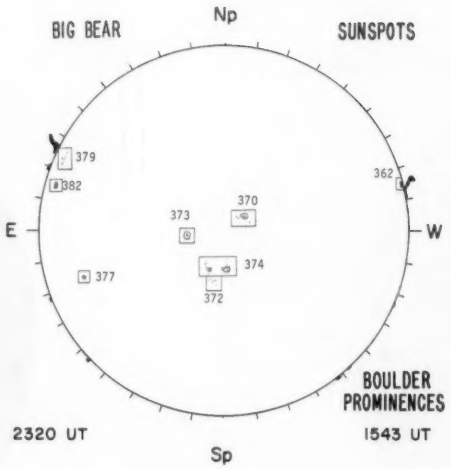
Sp

SACRAMENTO PEAK Hα



1439 UT

BIG BEAR SUNSPOTS

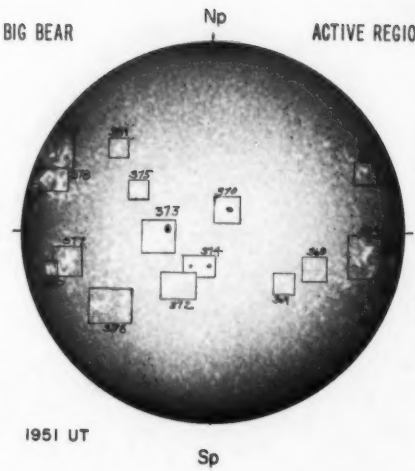


2320 UT

BOULDER PROMINENCES

1543 UT

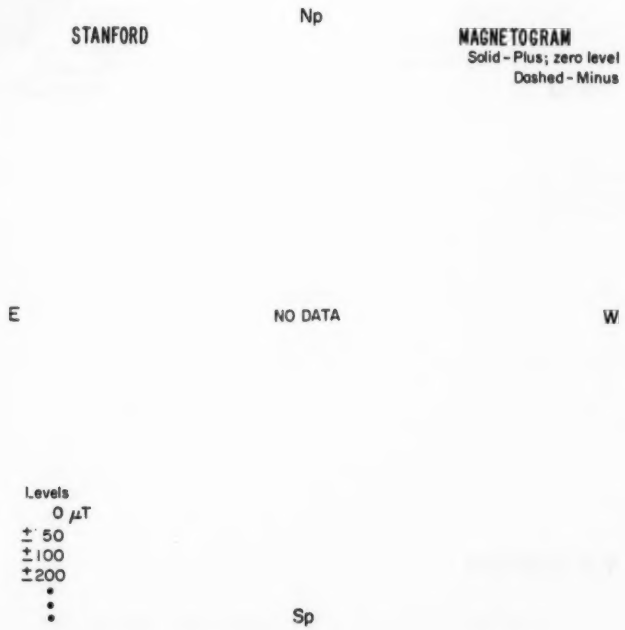
BIG BEAR ACTIVE REGIONS



1951 UT

72- 0700-3.0
73- 1100-2.5
74- 1400-3.0

STANFORD



MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

Levels
0 μT
± 50
±100
±200
• • •

MAY 17, 1982 (P=-20.53, B_o=-2.44, L_o=23.66)

SACRAMENTO PEAK Np CORONA 5303 Å

E W

1.15 $R_\odot$ 1511 UT
1.35 $R_\odot$ 1450 UT
1.55 $R_\odot$ 1500 UT

Sp

KITT PEAK Np MAGNETOGRAM Bright-Plus Dark-Minus

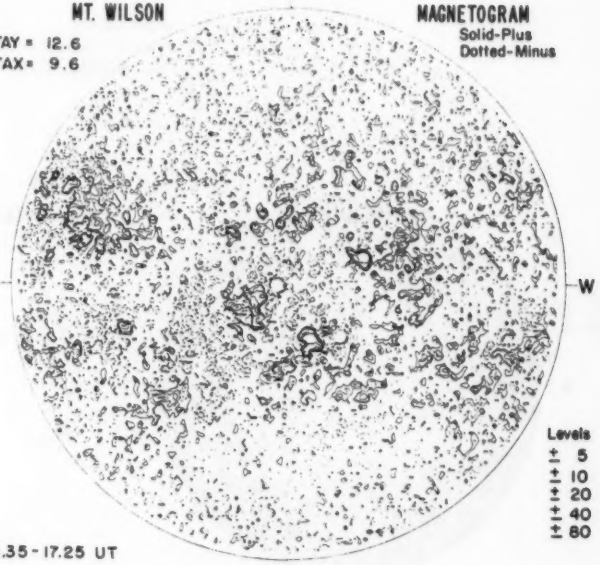
E W

1620 UT

Sp

MT. WILSON Np MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6



E W

Levels
± 5
± 10
± 20
± 40
± 80

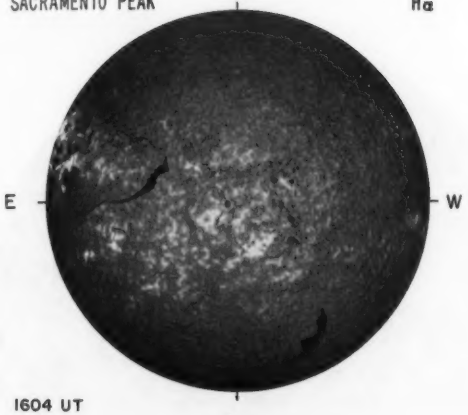
16.35-17.25 UT

Sp

17

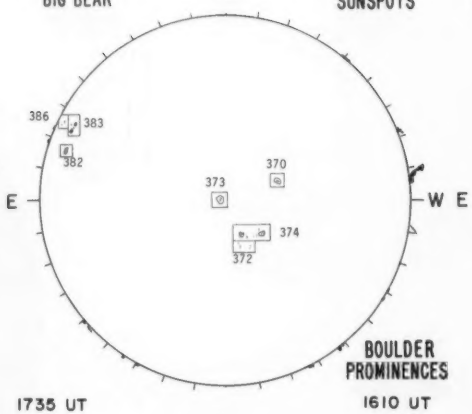
SACRAMENTO PEAK Np Hα BIG BEAR Np SUNSPOTS BIG BEAR Np ACTIVE REGIONS

SACRAMENTO PEAK Hα



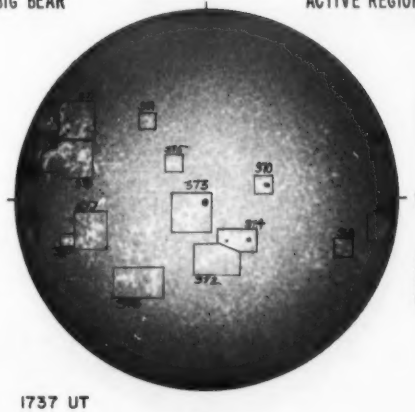
1604 UT

BIG BEAR SUNSPOTS



1735 UT

BIG BEAR ACTIVE REGIONS



72- 0700-2.5
73- 0800-2.5
74- 1200-2.5
83- 1000-2.5

1737 UT

BOULDER PROMINENCES

1610 UT

STANFORD

Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E NO DATA W

Levels
0 μT
± 50
±100
±200

Sp

97
May 82

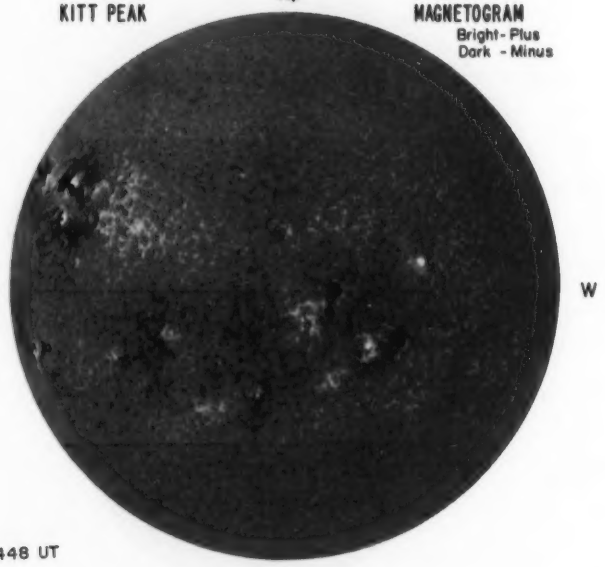
MAY 18, 1982 (P=-20.25, B_o=-2.33, L_o=10.43)

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

KITT PEAK Np MAGNETOGRAM
Bright-Plus
Dark - Minus



E W

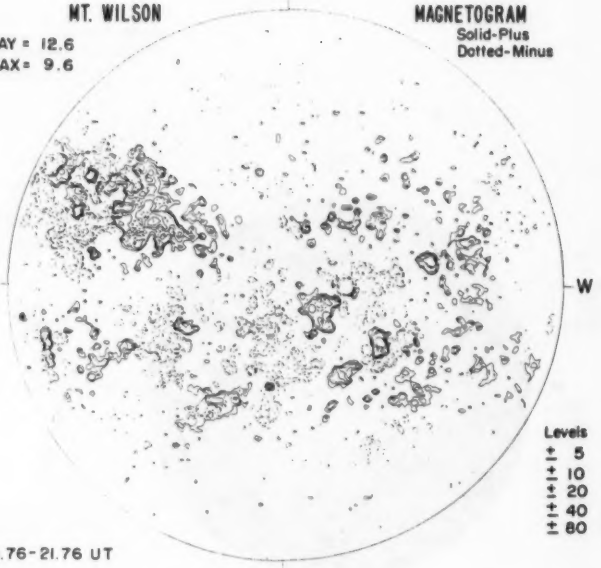
1448 UT

Sp

Sp
Np

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6



E W

Levels
± 5
± 10
± 20
± 40
± 80

20.76-21.76 UT

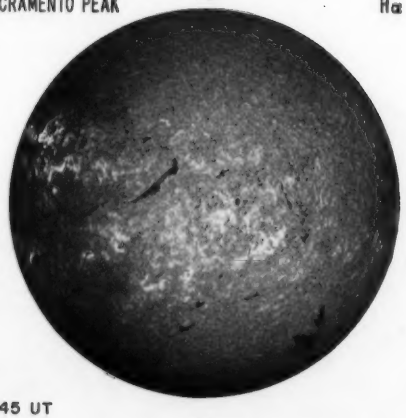
Sp

18

Np Np

ACTIVE REGIONS

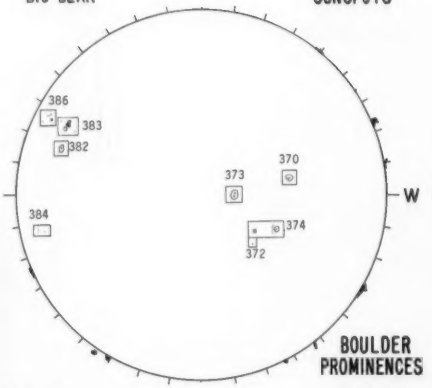
SACRAMENTO PEAK — Np — Hα



E W

1345 UT — Sp

BIG BEAR — Np — SUNSPOTS

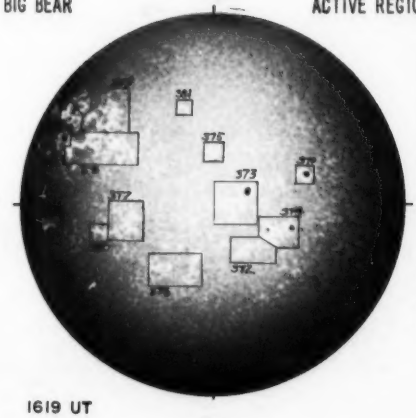


E W

1545 UT — Sp — 1550 UT

BOULDER PROMINENCES

BIG BEAR — Np — ACTIVE REGIONS



E W

1619 UT — Sp

72- 0500-2.5
73- 0700-2.5
74- 1200-2.5
78- 1700-2.5
83- 2000-2.5

STANFORD — Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E — NO DATA — W

Levels
0 μT
± 50
±100
±200
•
•
•

Sp

MAY 19, 1982 (P=-19.95, B_o=-2.21, L_o=357.21)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1457 UT
1.35 $R_\odot$ 1435 UT
1.55 $R_\odot$ 1445 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1450 UT

Sp

Np

MT. WILSON

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.6
DELTAX = 9.6

E

W

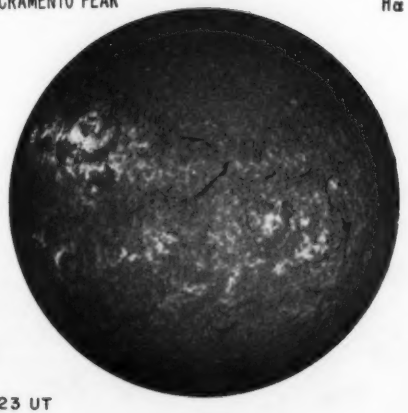
Levels
± 5
± 10
± 20
± 40
± 80

16.29-17.19 UT

Sp

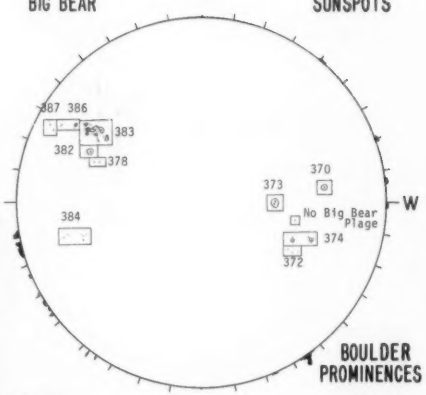
19

SACRAMENTO PEAK Hα



1323 UT

BIG BEAR SUNSPOTS

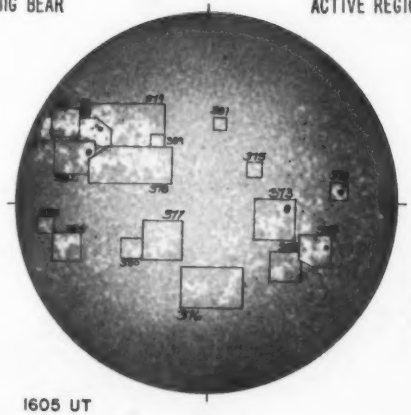


2125 UT

BOULDER PROMINENCES

1615 UT

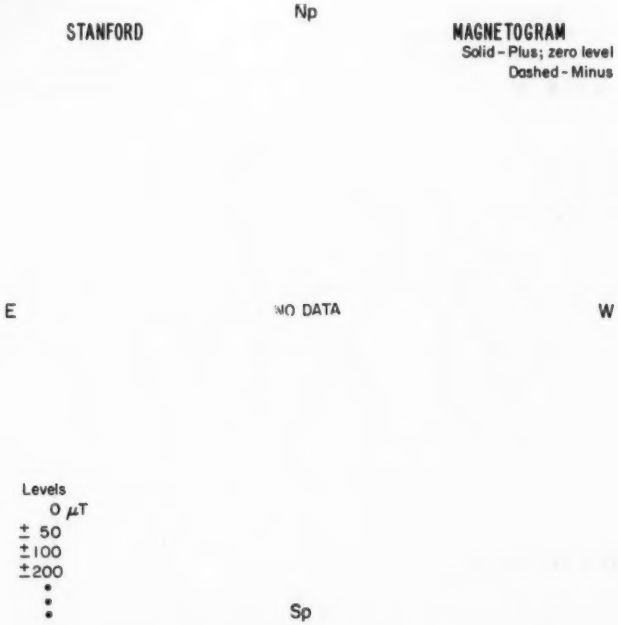
BIG BEAR ACTIVE REGIONS



1605 UT

73- 0700-2.5
74- 0900-3.0
78- 2300-2.5
83- 2800-3.5
84- 1100-2.5
86- 1800-2.5
89- 0100-2.5

STANFORD



MAY 20,1982 (P=-19.65, B_o=-2.10, L_e=343.98)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1432 UT
1.35 $R_\odot$ 1411 UT
1.55 $R_\odot$ 1421 UT

Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright-Plus
Dark - Minus

E

W

1345 UT

Sp

MT. WILSON

DELTAY = 12.7
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

W

Levels
± 5
± 10
± 20
± 40
± 80

17.28-18.18 UT

Sp

20

Np

Np

Np

SUNSPOTS

BIG BEAR

ACTIVE REGIONS

SACRAMENTO PEAK

Np

Hα

E W

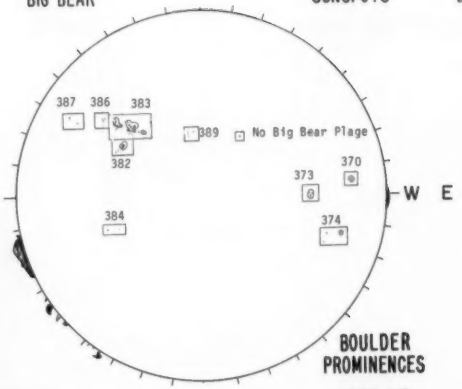
1443 UT

Sp

BIG BEAR

Np

SUNSPOTS



E W E

1705 UT

Sp

BIG BEAR

Np

ACTIVE REGIONS

NO DATA

E W

Sp

BOULDER PROMINENCES

1445 UT

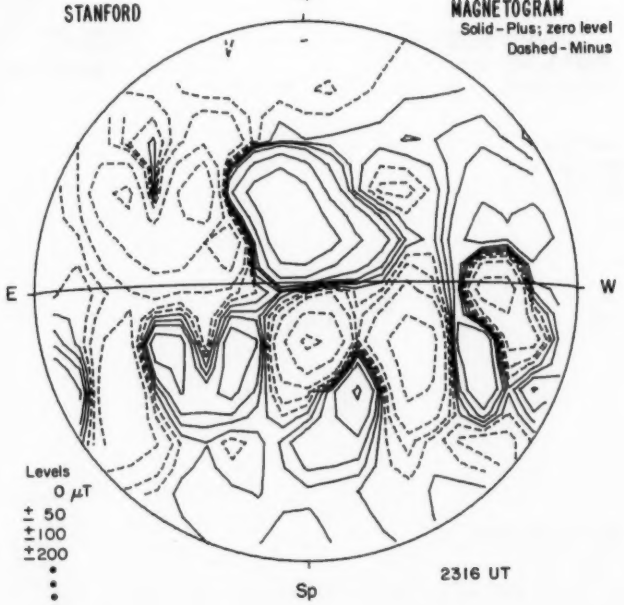
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



Sp

2316 UT

MAY 21, 1982 (P=-19.34, B_o=-1.98, L_o=330.75)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1403 UT
1.35 $R_\odot$ 1344 UT
1.55 $R_\odot$ 1353 UT

Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1343 UT

Sp

MT. WILSON

DELTAY = 12.6
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

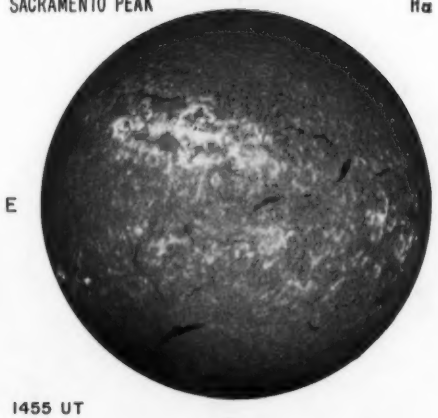
W

Levels
± 5
± 10
± 20
± 40
± 80

18.77-19.83 UT

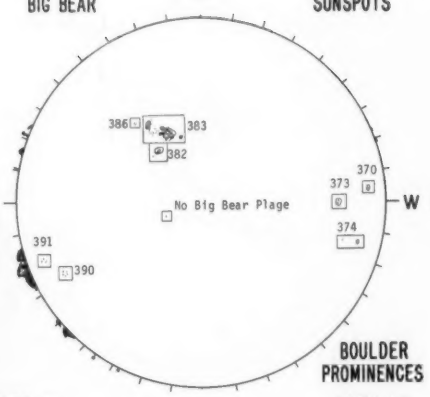
Sp

SACRAMENTO PEAK Hα



1455 UT

BIG BEAR SUNSPOTS

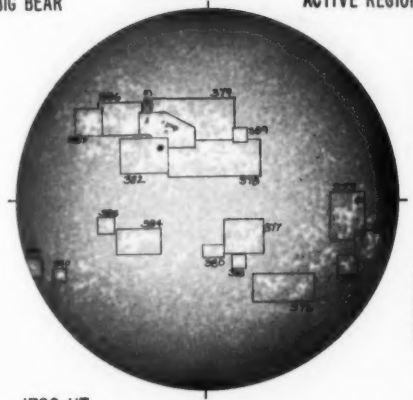


1540 UT

BOULDER PROMINENCES

1450 UT

BIG BEAR ACTIVE REGIONS



1700 UT

74- 0900-2.5
78- 3000-2.5
83- 3000-3.5
84- 0800-2.5
87- 0700-2.5
89- 0100-2.5
90- 0200-3.0

STANFORD

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

Levels
0 μT
± 50
±100
±200

MAY 22, 1982 (P=-19.03, B_o=-1.86, L_o=317.52)

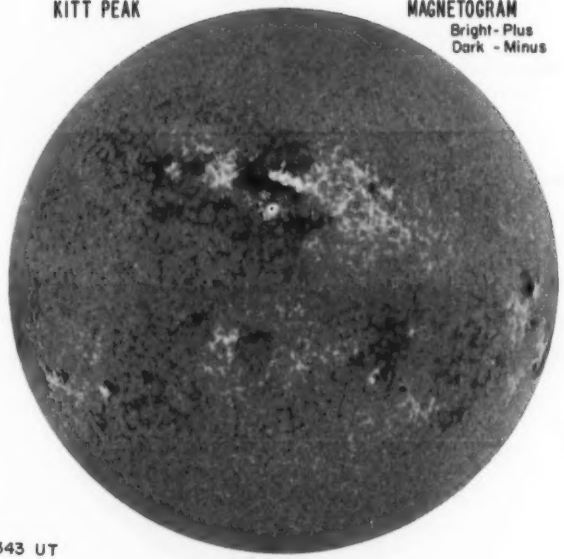
SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp
Np

KITT PEAK Np MAGNETOGRAM Bright-Plus Dark-Minus



E W

1343 UT

Sp

MT. WILSON MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY =
DELTAX =

E NO DATA W

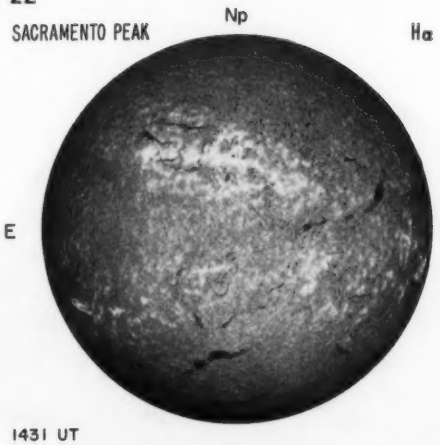
Levels
± 5
± 10
± 20
± 40
± 80

Sp

22

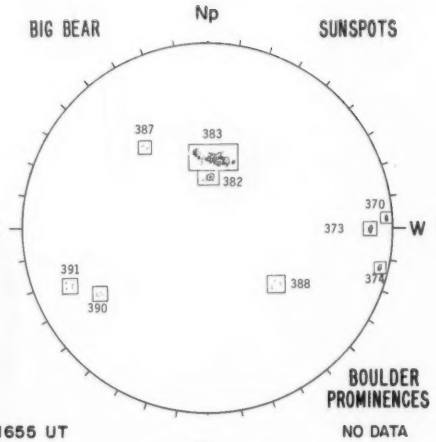
SACRAMENTO PEAK Np H- BIG BEAR Np SUNSPOTS BIG BEAR Np ACTIVE REGIONS

SACRAMENTO PEAK Hα



1431 UT

BIG BEAR SUNSPOTS

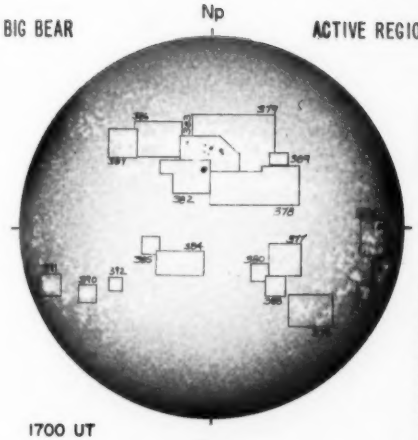


1655 UT

BOULDER PROMINENCES

NO DATA

BIG BEAR ACTIVE REGIONS

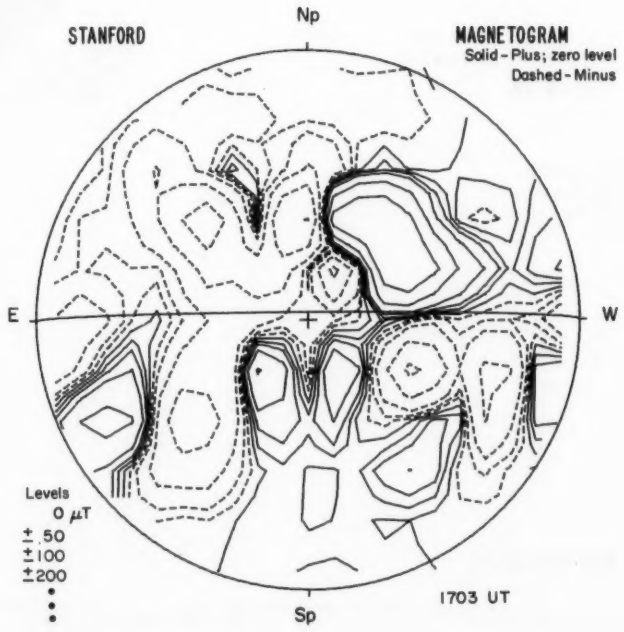


1700 UT

77- 0800-2.5
78- 2500-2.5
82- 0800-2.5
83- 3500-3.5
84- 0700-2.5
85- 0200-2.5
86- 1800-2.5
87- 1000-2.5
88- 0300-2.5
89- 0300-2.5
90- 0500-3.5
91- 0700-2.5
92- 0300-2.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



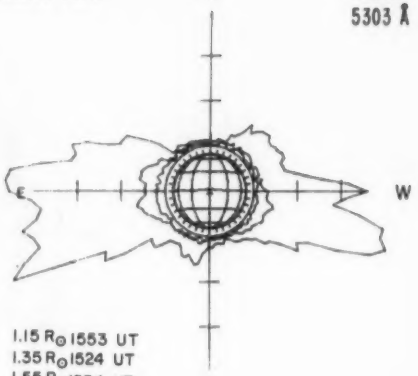
1703 UT

MAY 23, 1982 (P=-18.71, B_o=-1.74, L_o=304.29)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1553 UT
1.35 $R_\odot$ 1524 UT
1.55 $R_\odot$ 1534 UT

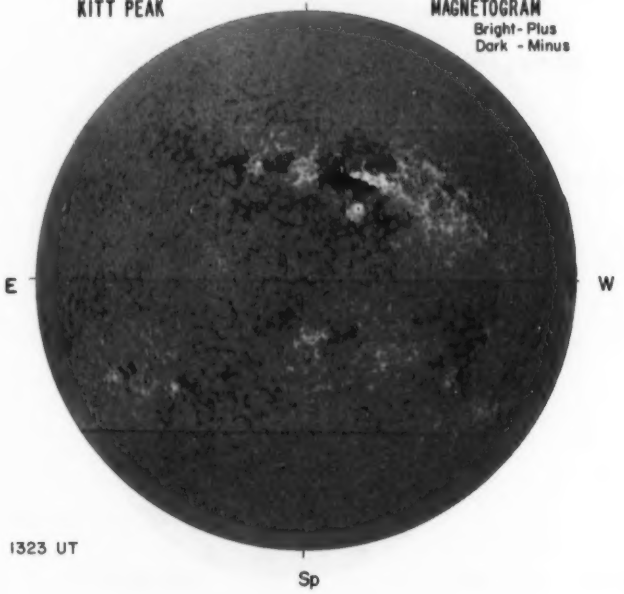
Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



MT. WILSON

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY =
DELTAX =

E

NO DATA

W

Levels
+ 5
+ 10
+ 20
+ 40
+ 80

Sp

23

Np

Np

Np

SACRAMENTO PEAK

Np

Hα

E W

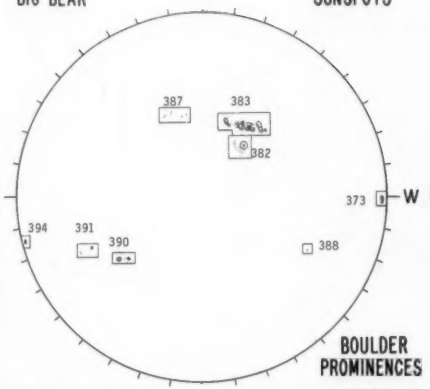
1424 UT

Sp

BIG BEAR

Np

SUNSPOTS



E W E

1715 UT

Sp

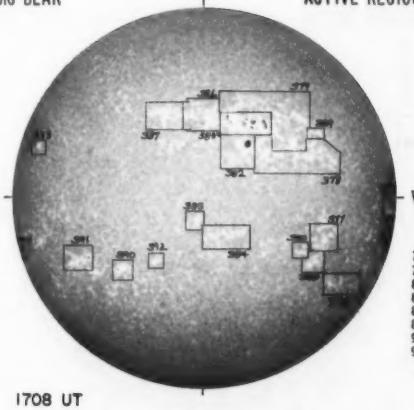
BOULDER PROMINENCES

NO DATA

BIG BEAR

Np

ACTIVE REGIONS



E W

1708 UT

Sp

78- 2500-2.5
79- 2400-2.5
82- 0600-2.5
83- 3200-3.5
87- 1100-2.5
88- 0400-2.5
90- 0600-3.5
91- 0700-2.5

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E

NO DATA

W

Levels

0 μT

±50

±100

±200

•

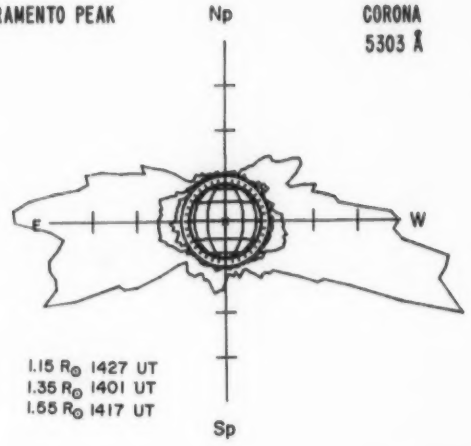
•

•

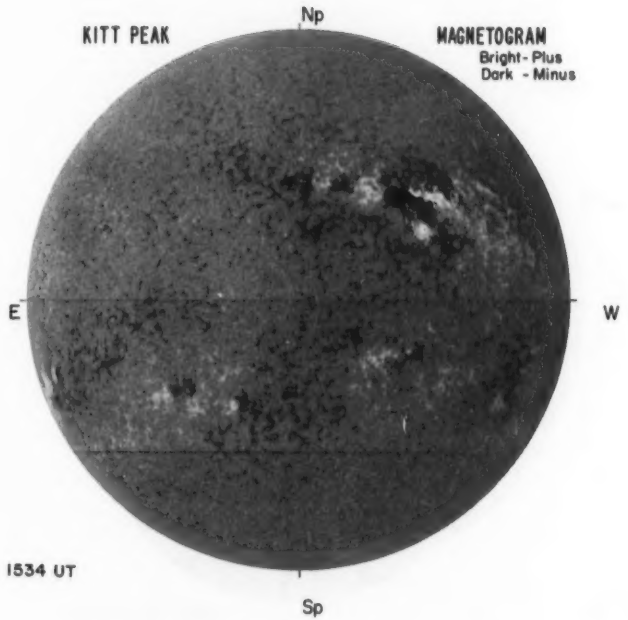
Sp

MAY 24, 1982 (P= -18.38, B_o = -1.63, L_o = 291.06)

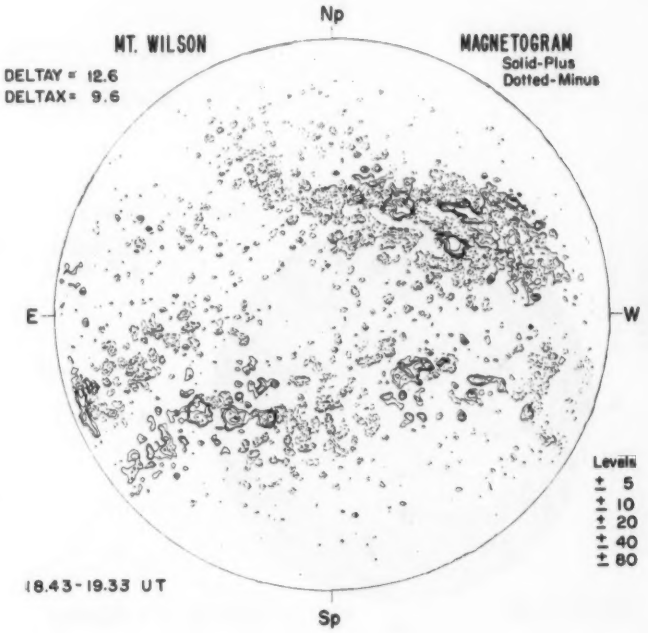
SACRAMENTO PEAK



1.15 $R_\odot$ 1427 UT
1.35 $R_\odot$ 1401 UT
1.55 $R_\odot$ 1417 UT

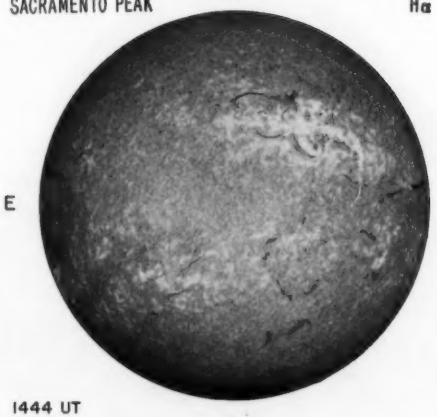


1534 UT



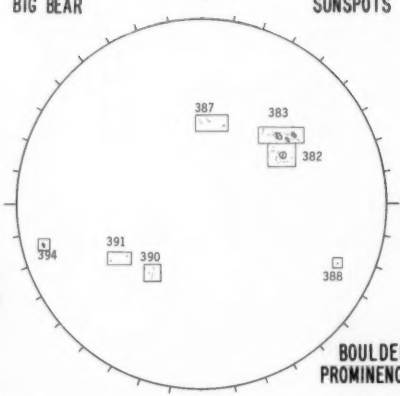
18.43 - 19.33 UT

SACRAMENTO PEAK Hα



1444 UT

BIG BEAR SUNSPOTS

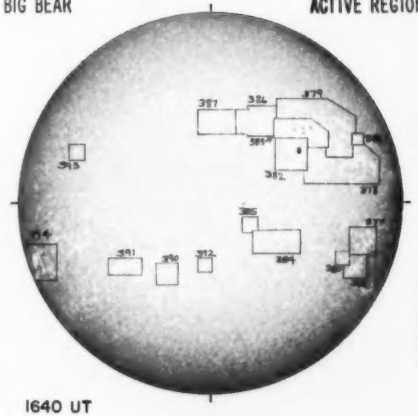


BOULDER PROMINENCES

NO DATA

1650 UT

BIG BEAR ACTIVE REGIONS

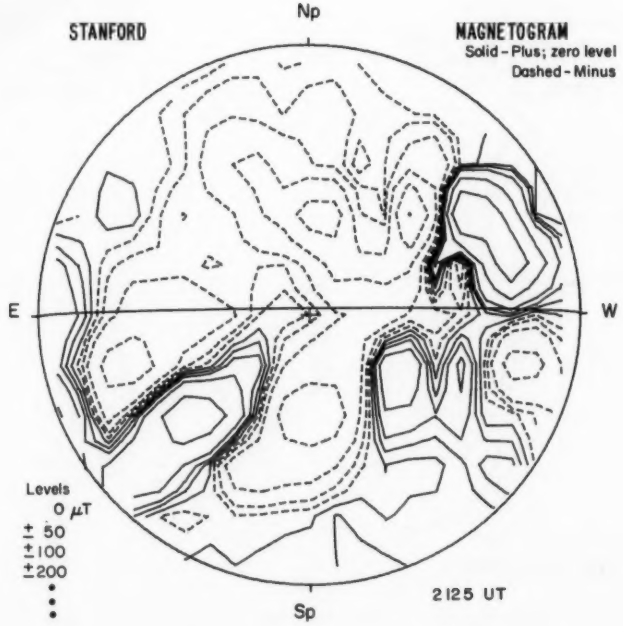


78- 2500-3.0
79- 2500-2.5
82- 0800-2.5
83- 3400-3.5
86- 1800-2.5
87- 1000-2.5
90- 0600-2.5
91- 0700-2.5

1640 UT

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



2125 UT

MAY 25, 1982 (P=-18.05, B_o=-1.51, L_o=277.83)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1423 UT
1.35 $R_\odot$ 1413 UT
1.55 $R_\odot$

Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1432 UT

Sp

MT. WILSON

DELTAY = 12.6
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

W

Levels
± 5
± 10
± 20
± 40
± 80

16.51-17.42 UT

Sp

25

Np

Np

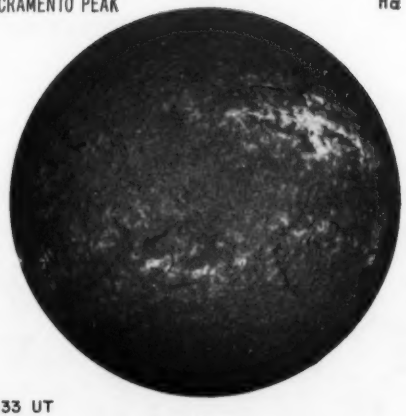
Np

SUNSPOTS

BIG BEAR

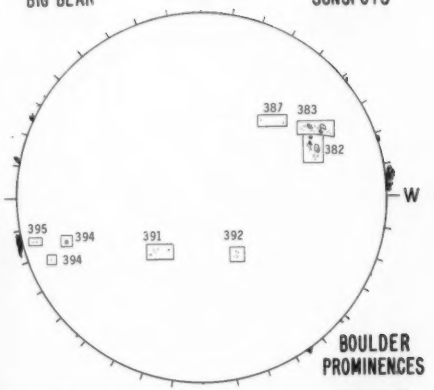
ACTIVE REGIONS

SACRAMENTO PEAK Hα



1433 UT

BIG BEAR SUNSPOTS



1605 UT

BIG BEAR ACTIVE REGIONS

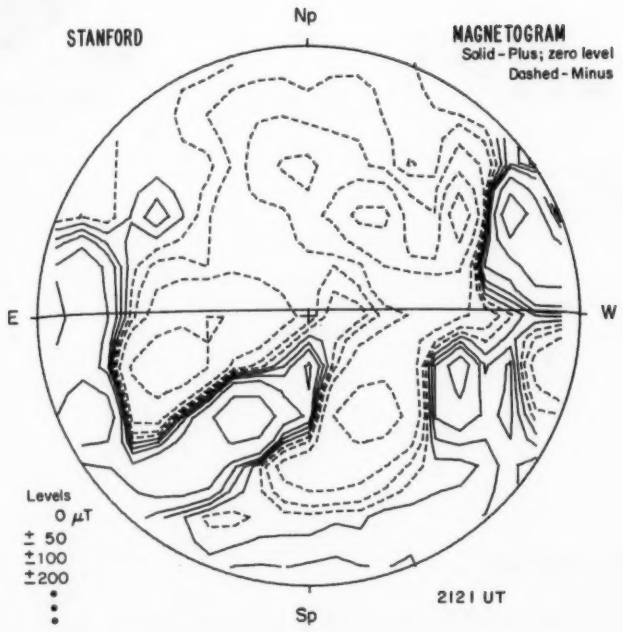
NO DATA

BOULDER PROMINENCES

1420 UT

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



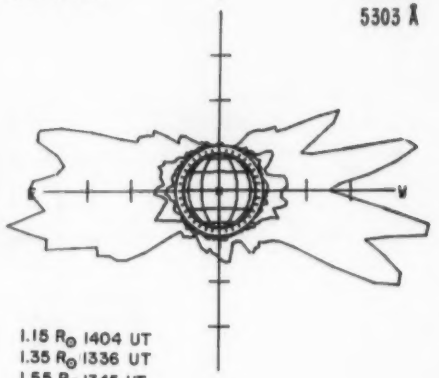
2121 UT

MAY 26, 1982 (P=-17.72, B_o=-1.39, L_o= 264.60)

SACRAMENTO PEAK

Np

CORONA
5303 Å



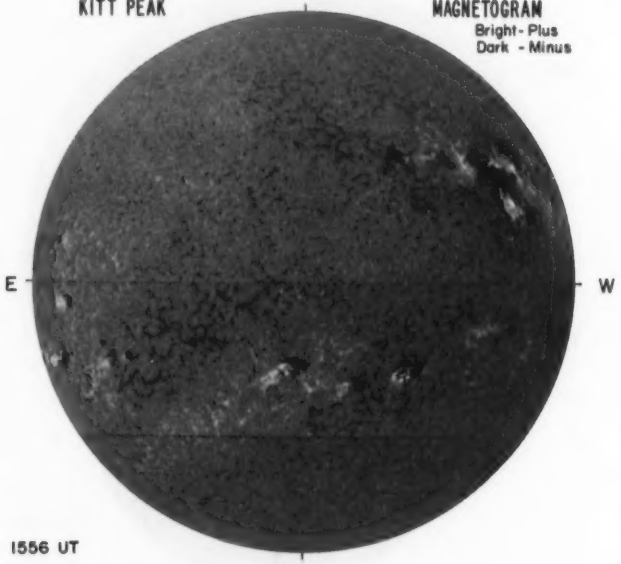
1.15 $R_\odot$ 1404 UT
1.35 $R_\odot$ 1336 UT
1.55 $R_\odot$ 1345 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1556 UT

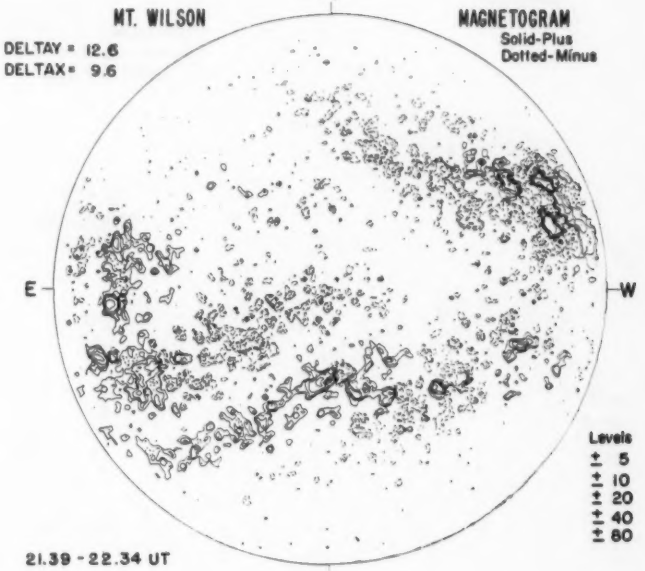
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6



21.39 - 22.34 UT

Sp

26

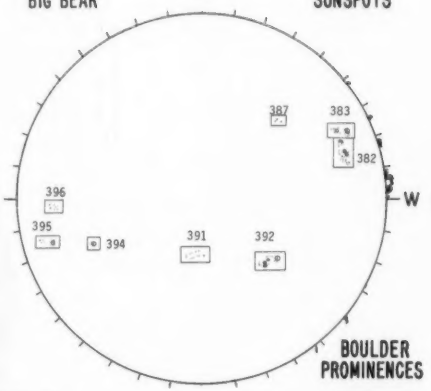
Np

Np

SACRAMENTO PEAK Hα

1448 UT

BIG BEAR SUNSPOTS

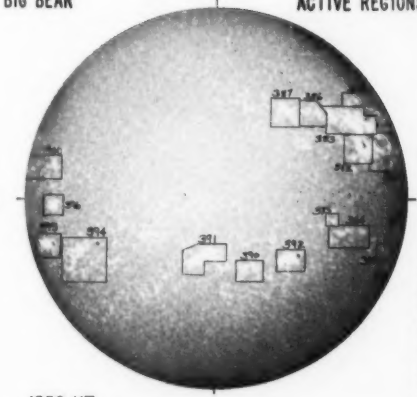


1645 UT

BOULDER PROMINENCES

1500 UT

BIG BEAR ACTIVE REGIONS

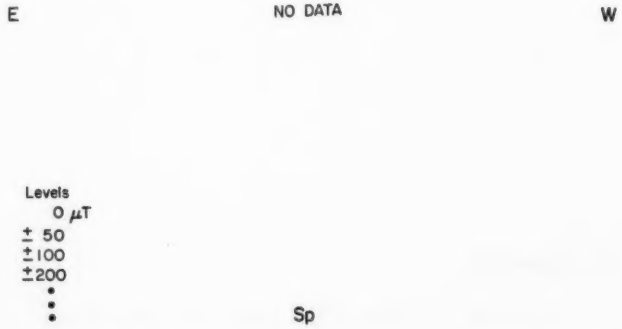


1850 UT

78- 1700-2.5
79- 1500-2.5
82- 1500-3.0
83- 3500-3.5
87- 1100-2.5
90- 0700-2.5
91- 1300-3.0
92- 1000-3.5
94- 1600-2.5
95- 1000-4.0
96- 1000-3.5

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



Levels
0 μT
± 50
±100
±200
•
•
•

MAY 27, 1982 (P=-17.37, B_o=-1.27, L_o=251.37)

SACRAMENTO PEAK Np CORONA 5303 Å

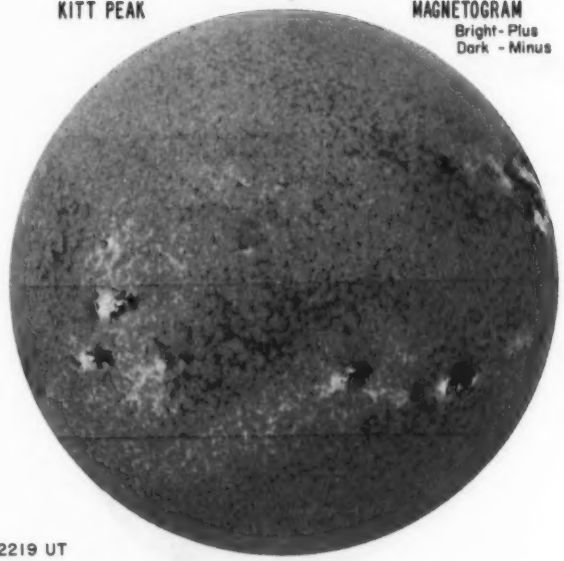
E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

KITT PEAK Np MAGNETOGRAM Bright-Plus Dark-Minus



E W

2219 UT

Sp

MT. WILSON MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY =
DELTAX =

E NO DATA W

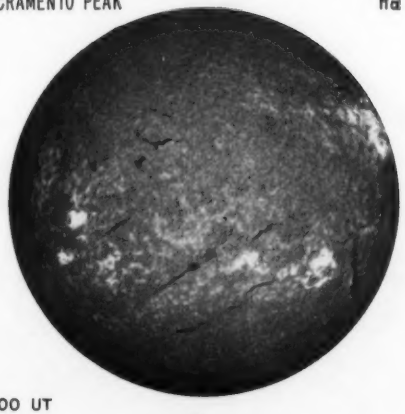
Levels
± 5
± ± 10
± ± ± 20
± ± ± ± 40
± ± ± ± ± 80

Sp

27

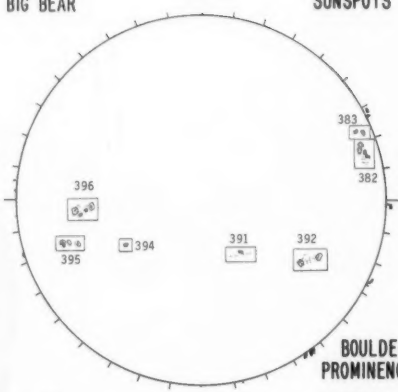
SACRAMENTO PEAK Np H_α BIG BEAR Np SUNSPOTS BIG BEAR Np ACTIVE REGIONS

SACRAMENTO PEAK Hα



1600 UT

BIG BEAR SUNSPOTS

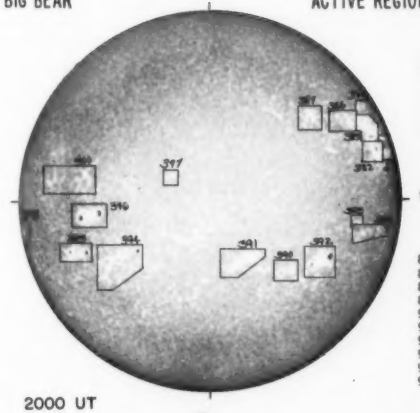


---- UT

BOULDER PROMINENCES

1705 UT

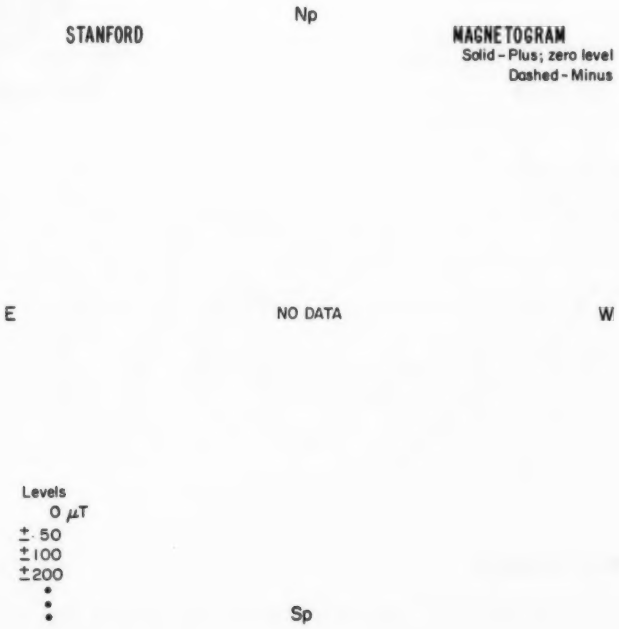
BIG BEAR ACTIVE REGIONS



2000 UT

82- 1500-2.5
83- 3000-3.5
86- 0800-2.5
87- 1000-2.5
91- 1600-3.0
92- 1700-3.5
94- 1500-2.5
95- 1700-3.5
96- 1500-4.0
97- 0100-3.5

STANFORD



MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

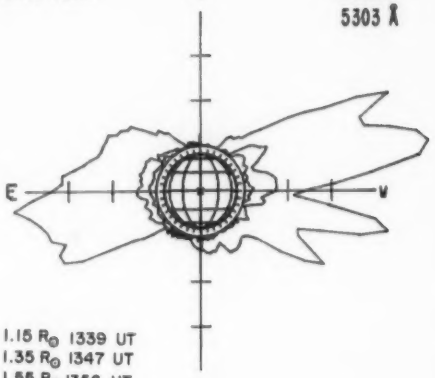
NO DATA

MAY 28, 1982 (P=-17.02, B_o=-1.15, L_o=238.14)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1339 UT
1.35 $R_\odot$ 1347 UT
1.55 $R_\odot$ 1356 UT

Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright-Plus
Dark - Minus

1619 UT

Sp

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

NO DATA

W

Levels
± 5
± 10
± 20
± 40
± 80

Sp

28

Np

Np

Np

SUNSPOTS

BIG BEAR

ACTIVE REGIONS

SACRAMENTO PEAK

Np

Hα

E W

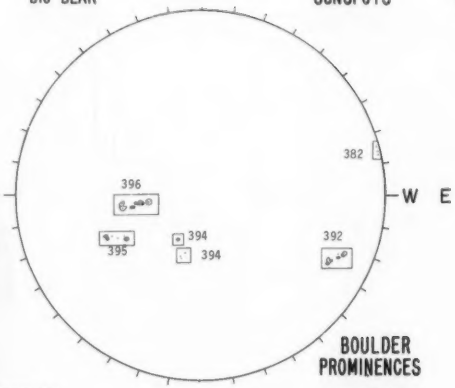
Sp

1513 UT

BIG BEAR

Np

SUNSPOTS



E W E W

BOULDER PROMINENCES

NO DATA

2255 UT

Sp

BIG BEAR

Np

ACTIVE REGIONS

NO DATA

E W

Sp

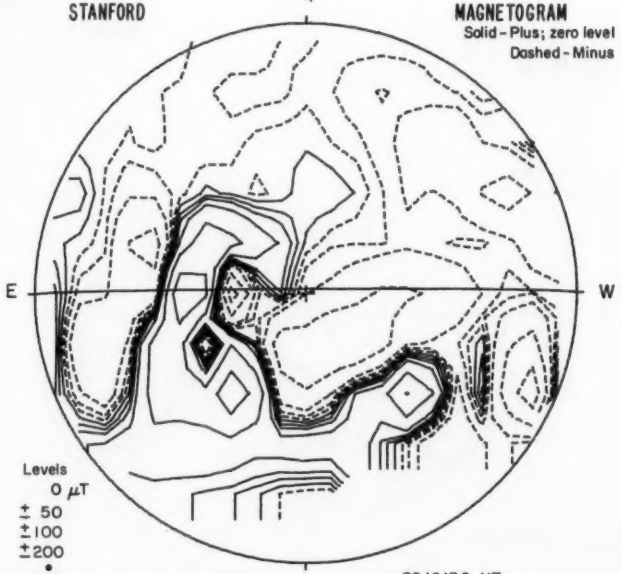
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

• • •

Sp

29/0136 UT

MAY 29, 1982 (P=-16.67, B_o=-1.03, L_o=224.91)

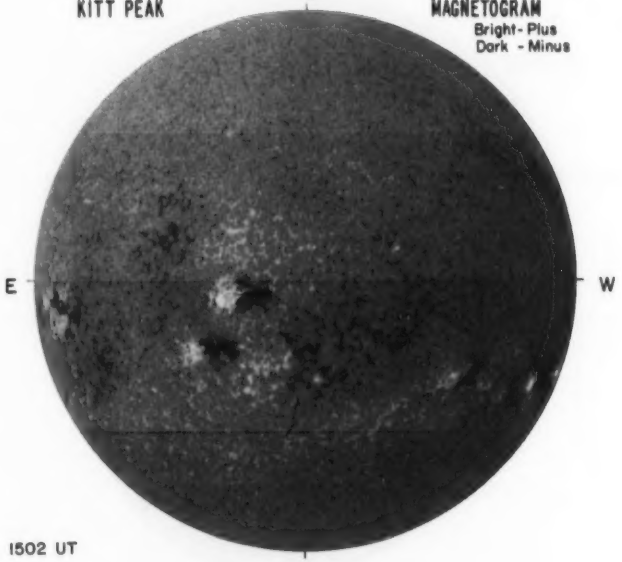
SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

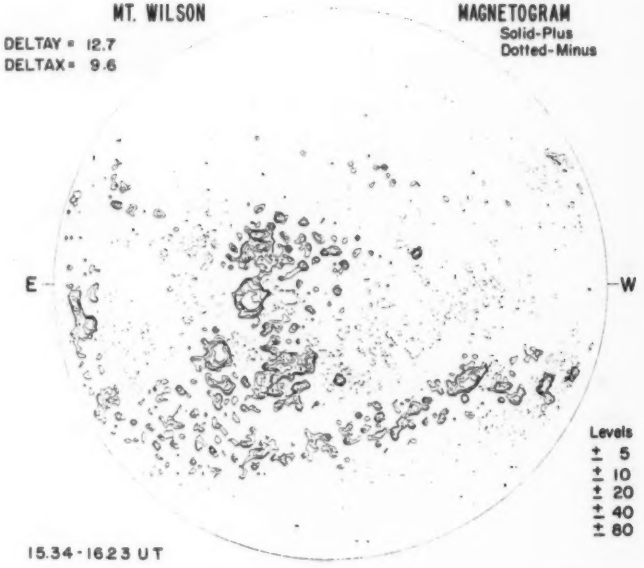
KITT PEAK Np MAGNETOGRAM Bright-Plus Dark-Minus



Np

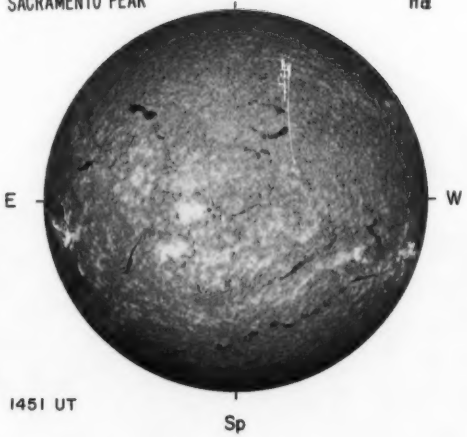
MT. WILSON MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY = 12.7
DELTAX = 9.6



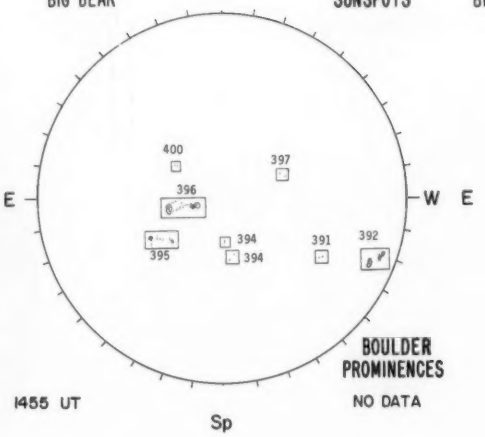
29

SACRAMENTO PEAK Hα



1451 UT

BIG BEAR SUNSPOTS



BOULDER PROMINENCES

NO DATA

1455 UT

Sp

BIG BEAR ACTIVE REGIONS

Np

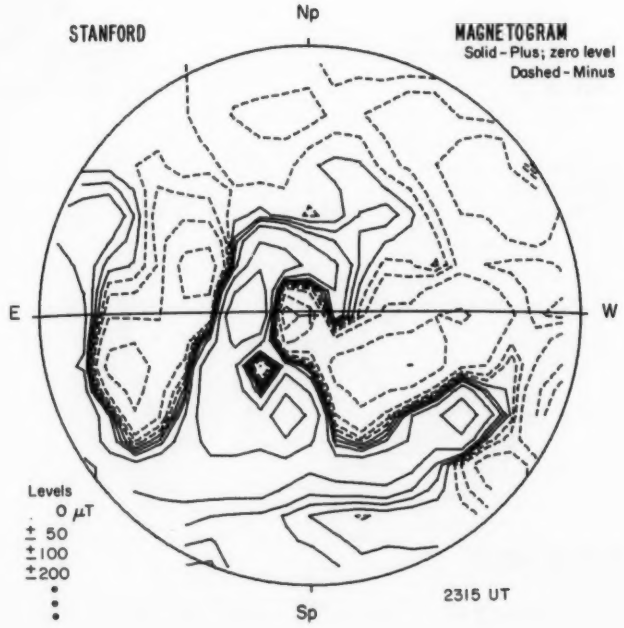
NO DATA

W

Sp

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

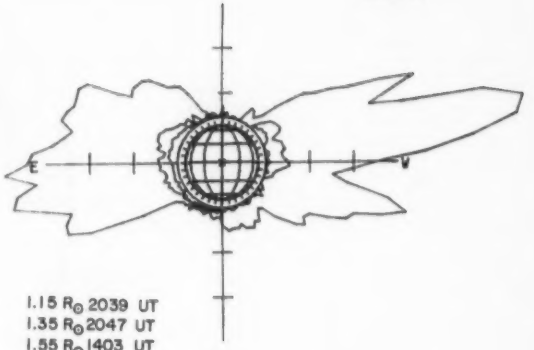


2315 UT

121
May 82

MAY 30, 1982 (P=-16.31, B_o=-0.91, L_o= 211.68)

SACRAMENTO PEAK Np CORONA 5303 Å

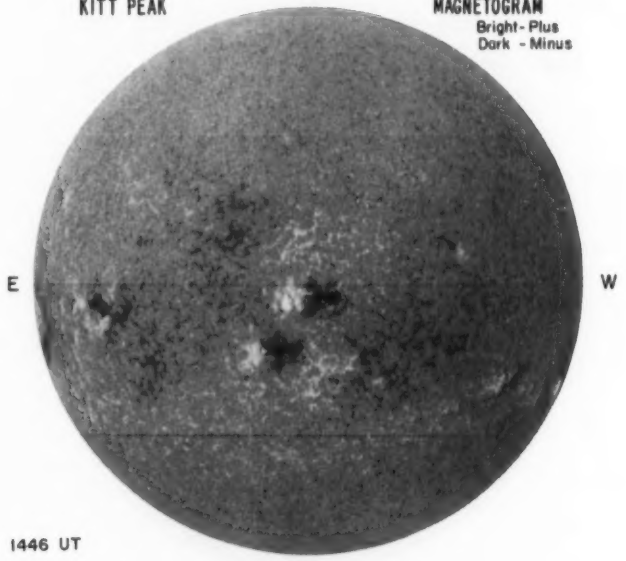


1.15 $R_\odot$ 2039 UT
1.35 $R_\odot$ 2047 UT
1.55 $R_\odot$ 1403 UT

Sp

Np

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

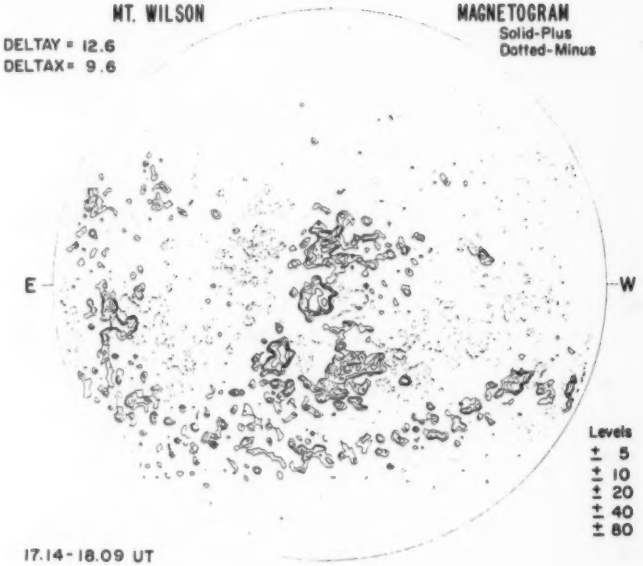


1446 UT

Sp

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6

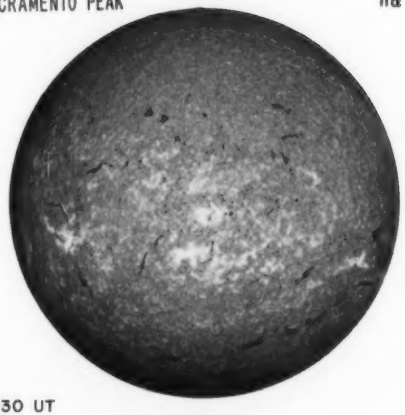


17.14-18.09 UT

Sp

30

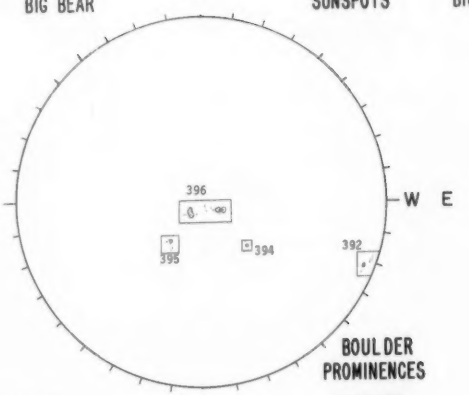
SACRAMENTO PEAK Np Hα



E W

1430 UT Sp

BIG BEAR Np SUNSPOTS BIG BEAR



E W E

BOULDER PROMINENCES

NO DATA

1700 UT Sp

Np ACTIVE REGIONS

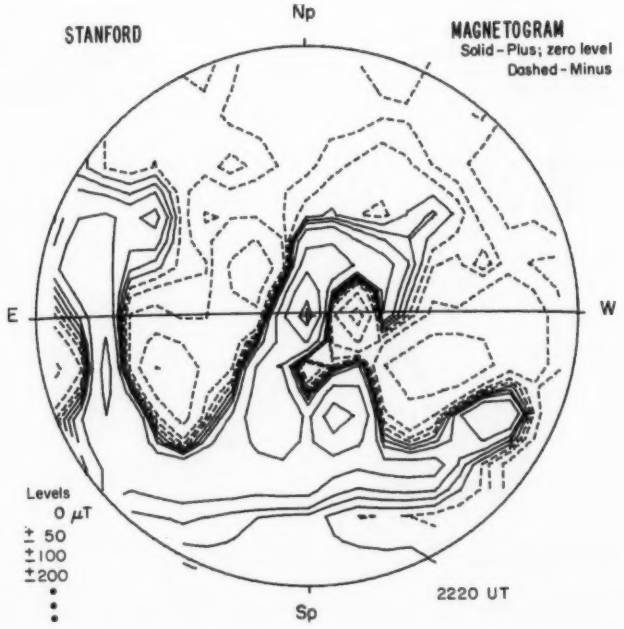
NO DATA W

Sp

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

2220 UT

Sp

MAY 31, 1982 (P=-15.95, B_o = -0.79, L_o = 198.44)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$ 1412 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

NO DATA

E

W

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.6
DELTAX = 9.6

E

W

Levels
±1 5
±1±1 10
±1±1±1 20
±1±1±1±1 40
±1±1±1±1±1 80

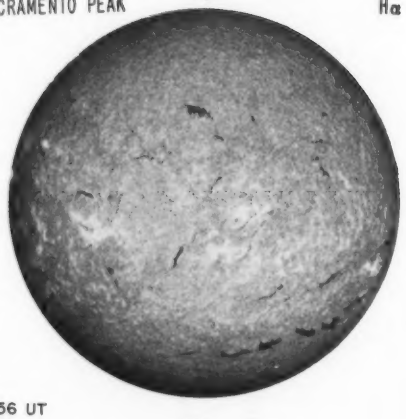
16.29-17.19 UT

Sp

31

31

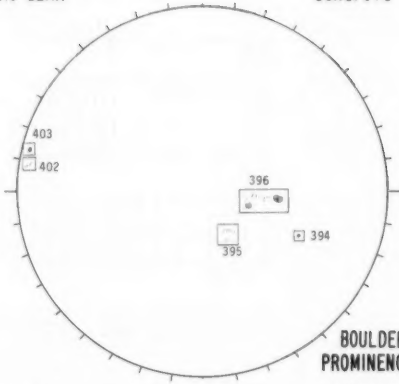
SACRAMENTO PEAK Np Hα



E W

1456 UT Sp

BIG BEAR Np SUNSPOTS



E W

---- UT Sp

BIG BEAR Np ACTIVE REGIONS

NO DATA

E W

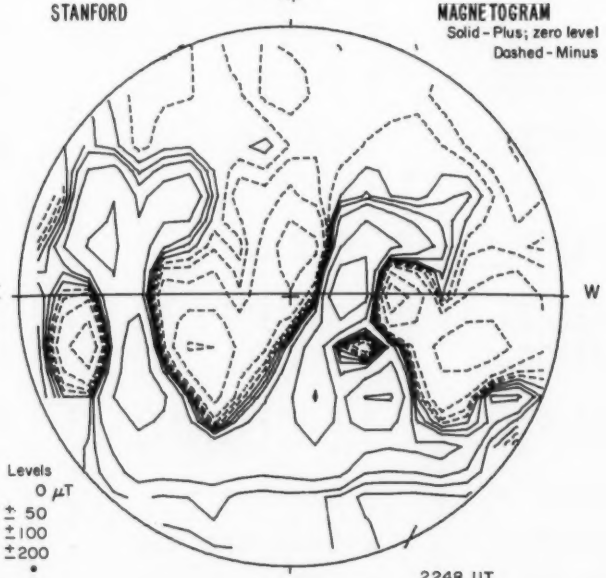
BOULDER PROMINENCES

NO DATA Sp

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



Sp 2248 UT

REGIONS OF SOLAR ACTIVITY

MAY 1982

HALE REGION 18342 CMP DATE 1.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	24	18342	S05 E78	241	100	1.0									
82	04	25	18342	S06 E68	238	800	1.5									
82	04	26	18342	S06 E55	237	800	1.0									
82	04	27	18342	S07 E43	233	600	1.0									
82	04	28	18342	S07 E35	231	500	1.0									
82	04	30	18342	S07 E08	233	400	1.5									
82	05	1	18342	S07 W07	233	400	2.0									
82	05	2	18342	S08 W20	233	400	2.5									

HALE REGION 18346 CMP DATE 1.5

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	26	18346	N16 E67	225	600	3.0		N18 E70				H		1	AXX
82	04	27	18346	N16 E49	227	700	3.0		N17 E58				R	10	1	AXX
82	04	28	18346	N17 E40	226	600	3.0									
82	04	30	18346	N17 E15	226	500	3.0									
82	05	1	18346	N17 W02	228	400	2.5									
82	05	2	18346	N17 W15	228	400	2.0									

HALE REGION 18347 CMP DATE 2.4

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	26	18347	S20 E78	214	800	3.5		S17 E74				B	10	2	BXO
82	04	27	18347	S18 E63	213	1200	3.5	23112	S18 E65	214	B	3	H	20	9	BXO
82	04	28	18347	S18 E53	213	1300	3.5	23112	S17 E52	214	(B)	4	H	190	14	DAO
82	04	29	18347					23112	S18 E39	214	(B)	4	B	120	23	DAI
82	04	30	18347	S18 E26	215	2000	3.5	23112	S18 E24	215	(B)	4	B	340	21	EKI
82	05	1	18347	S17 E10	216	2400	3.0	23112	S18 E10	216	(B)	4				
82	05	2	18347	S17 W03	216	2600	3.0	23112	S17 W02	215	(D)	5				
82	05	3	18347					23112	S17 W15	215	(D)	4	H	510	26	EAI
82	05	4	18347						S18 W39				H	420	16	ESO
82	05	5	18347					23112	S18 W40	213	(BY)	5	M	650	7	ESO
82	05	6	18347	S18 W56	214	2400	2.5	23112	S18 W53	213	(B)	4	H	200	6	ESO
82	05	7	18347	S18 W70	213	1500	2.0	23112	S18 W66	213	(B)	4	H	240	5	DAO

HALE REGION 18348 CMP DATE 4.2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	27	18348	N09 E70	206	700	1.0									
82	04	28	18348	N09 E60	206	700	1.0									
82	04	30	18348	N07 E46	195	1000	1.0									
82	05	1	18348	N07 E30	196	1300	2.5									
82	05	2	18348	N07 E18	195	1500	2.5									
82	05	4	18348						N09 W10				B	10	1	BXO
82	05	6	18348	N07 W34	192	1500	1.5									
82	05	7	18348	N07 W47	190	1500	1.5									
82	05	8	18348	N07 W60	192	1500	1.0									
82	05	9	18348	N06 W73	191	1100	1.0		N10 W68				L		1	AXX

REGIONS OF SOLAR ACTIVITY

MAY 1982

HALE REGION 18354 CMP DATE 6.3

CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	1	18354	N10 E58	168	400	1.5									
82	05	2	18354	N10 E47	166	300	2.0									
82	05	6	18354	N09 W07	165	400	1.5									
82	05	7	18354	N08 W20	163	300	1.0									
82	05	8	18354	N08 W34	166	400	1.0									
82	05	9	18354	N08 W47	165	300	1.0									
82	05	10	18354	N08 W60	166	100	1.0									

HALE REGION 18351 CMP DATE 6.6

CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	30	18351	S15 E77	164	400	3.0									
82	05	1	18351	S15 E62	164	700	2.5									
82	05	2	18351	S15 E50	163	1700	2.5	23118	S15 E49	164	(AP)	2				
82	05	3	18351					23118	S16 E34	166	(AP)	2	H		1	AXX
82	05	4	18351						S16 E29				M	10	1	AXX
82	05	5	18351					23118	S16 E06	167	(AP)	3				
82	05	6	18351	S17 W02	160	1500	2.0	23123	S23 E04	156	(AF)	2				
82	05	6	18351	S17 W02	160	1500	2.0	23118	S15 W05	165	(AP)	3	H	10	3	AXX
82	05	7	18351	S18 W15	158	1200	2.0									
82	05	8	18351	S18 W29	161	1200	2.0									
82	05	9	18351	S18 W42	160	1500	2.0									
82	05	10	18351	S19 W55	161	1200	1.0									

HALE REGION 18352 CMP DATE 6.6

CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	04	30	18352	N25 E80	161	300	2.5									
82	05	1	18352	N25 E66	160	500	3.0									
82	05	2	18352	N25 E52	161	500	3.0									
82	05	6	18352	N25 W03	161	300	1.5									
82	05	7	18352	N24 W16	159	300	2.0									
82	05	8	18352	N24 W28	160	400	2.0									
82	05	9	18352	N24 W41	159	300	1.5									
82	05	10	18352	N24 W54	160	200	1.0									

HALE REGION 18355 CMP DATE 7.0

CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	1	18355	S03 E70	156	300	1.5									
82	05	2	18355	S03 E58	155	300	1.5									
82	05	3	18355					23119	S03 E46	154	(AF)	2				
82	05	6	18355	S04 E03	155	400	1.5									
82	05	7	18355	S05 W12	155	300	1.5									
82	05	8	18355	S04 W23	155	300	1.5									
82	05	9	18355	S04 W36	154	300	1.5									
82	05	10	18355	S04 W50	156	200	1.0									

REGIONS OF SOLAR ACTIVITY

MAY 1982

HALE REGION 18356 CMP DATE 7.8

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	1	18356	S06	E80	146	600	2.5	23116	S05	E85		AP	2				
82	05	2	18356	S06	E67	146	1200	2.5	23116	S07	E69	144	(BY)	3	H	40	8	CRO
82	05	3	18356						23116	S06	E56	144	(D)	4	H	1890	23	EAI
82	05	4	18356							S06	E39				H	160	21	EAI
82	05	5	18356						23116	S06	E30	143	(B)	5	M	980	23	DKI
82	05	6	18356	S06	E12	146	2800	3.5	23116	S06	E16	144	(D)	5	H	610	30	DKI
82	05	7	18356	S06	W02	145	3000	3.5	23116	S06	E02	145	(B)	5	H	760	39	DKI
82	05	8	18356	S06	W14	146	3000	3.0		S04	W11				H	700	47	EKI
82	05	9	18356	S06	W27	145	3000	3.5		S04	W26				H	510	25	EKC
82	05	10	18356	S06	W41	147	2600	3.0		S04	W38				H	410	30	DKI
82	05	11	18356						23116	S05	W54	149	(B)	5	H	270	29	DKO
82	05	12	18356	S06	W67	146	2500	2.5	23116	S05	W67	149	(B)	4	H	290	7	EHO
82	05	13	18356						23116	S05	W80	148	(BP)	3	H	100	4	DSI

HALE REGION 18367 CMP DATE 9.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	6	18367	S03	E30	128	400	2.0										
82	05	7	18367	S03	E17	126	500	2.0										
82	05	8	18367	S03	E05	127	500	2.0										
82	05	9	18367	S03	W09	127	500	2.0										
82	05	10	18367	S03	W23	129	500	2.0										
82	05	12	18367	S04	W48	127	300	1.5	23131	S08	W46	128	(B)	3	H	10	3	BXO
82	05	13	18367						23131	S06	W60	128	(B)	4	H	30	3	CRO
82	05	14	18367						23131	S06	W73	128	(B)	3	M	60	3	BXO

HALE REGION 18361 CMP DATE 9.7

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	6	18361	N16	E35	123	1400	2.0										
82	05	7	18361	N16	E24	119	1700	2.0										
82	05	8	18361	N16	E11	121	2000	2.0										
82	05	9	18361	N16	W02	120	1800	2.5										
82	05	10	18361	N16	W15	121	2000	2.0										
82	05	12	18361	N16	W42	121	1800	1.5										
82	05	15	18361	N18	W82	122	500	1.0										

HALE REGION 18358 CMP DATE 9.8

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	3	18358						23120	S22	E79	121	(B)	3	H	150	5	BXO
82	05	4	18358							S22	E67				H	70	4	DAO
82	05	5	18358						23120	S22	E54	119	(B)	4	M	20	4	BXO
82	05	6	18358	S20	E37	121	1200	2.0	23120	S22	E37	123	(AP)	4	H		1	AXX
82	05	7	18358	S22	E25	118	700	2.0	23127	S24	E32	115	(AF)	4	B		1	AXX
82	05	8	18358	S23	E13	119	600	2.0		S20	E15				H	20	5	BXO
82	05	9	18358	S24	W00	118	600	2.0										
82	05	10	18358	S24	W12	118	500	2.0										
82	05	12	18358	S24	W36	115	500	2.0										

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HALE REGION 18359 CMP DATE 10.1

CALCIUM PLAGE DATA									SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	6	18359	S09	E40	118	1500	1.5	23124	S10	E32	128	(AP)	3	L		1	AXX
82	05	7	18359	S10	E27	116	2400	2.0	23126	S13	E26	121	(AP)	2				
82	05	8	18359	S10	E15	117	2700	2.0										
82	05	9	18359	S10	E03	115	2800	2.0										
82	05	10	18359	S10	W10	116	2800	2.0		S12	W08				H		1	AXX
82	05	12	18359	S12	W37	116	2700	2.0										
82	05	13	18359						23134	S17	W55	123	(AP)	3	L		1	AXX
82	05	15	18359	S13	W77	117	700	1.0										
82	05	16	18359	S13	W87	113	300	1.0										

HALE REGION 18362 CMP DATE 10.4

CALCIUM PLAGE DATA									SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	3	18362						23121	N12	E88	112	AP	2	H	150	1	HHX
82	05	4	18362							N14	E71				H	120	1	HSX
82	05	5	18362						23121	N13	E59	114	(AP)	5	M	360	1	HSX
82	05	6	18362	N13	E47	111	500	2.5	23121	N12	E47	113	(AP)	5	H	100	1	HSX
82	05	7	18362	N13	E35	108	900	2.5	23121	N13	E35	112	(BP)	5	H	230	6	CSO
82	05	7	18362	N13	E35	108	900	2.5	23128	N18	E38	109	(AF)	3	H	230	6	CSO
82	05	8	18362	N13	E22	110	900	2.5		N15	E22				H	110	2	CSO
82	05	9	18362	N13	E08	110	800	2.0		N14	E06				H	110	1	HSX
82	05	10	18362	N13	W05	111	800	2.0		N14	W06				H	150	1	HSX
82	05	11	18362						23121	N13	W18	113	(AP)	5	H	110	1	HSX
82	05	12	18362	N12	W30	109	700	1.5	23121	N14	W32	114	(AP)	5	H	130	1	HAX
82	05	13	18362						23121	N14	W45	113	(AP)	5	H	80	1	HSX
82	05	14	18362						23121	N14	W58	113	(AP)	5	P	80	1	HSX
82	05	15	18362	N12	W70	110	400	1.0	23121	N14	W70	111	(AP)	4	H	120	1	HSX
82	05	16	18362						23121	N14	W85	113	(AP)	2	H	80	1	HSX

HALE REGION 18360 CMP DATE 11.5

CALCIUM PLAGE DATA									SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	5	18360						23122	S07	E79	94	(AP)	2	M	20	2	AXX
82	05	6	18360	S08	E62	96	700	2.5	23122	S08	E63	97	(B)	3	H	10	4	BXO
82	05	7	18360	S08	E48	95	1100	2.5	23122	S09	E50	97	(BP)	4	H	20	6	CRO
82	05	8	18360	S08	E35	97	800	3.0		S07	E36				H	20	5	CRO
82	05	9	18360	S07	E22	96	700	3.0		S07	E21				H	10	3	BXO
82	05	10	18360	S07	E09	97	500	2.5		S08	E07				H		1	AXX
82	05	11	18360						23122	S08	W07	102	(AP)	3	H	10	1	AXX
82	05	12	18360	S07	W17	96	400	2.5	23122	S08	W18	100	(B)	3	H		1	AXX
82	05	15	18360	S08	W59	99	400	1.5										
82	05	16	18360	S08	W74	100	100	1.0										

HALE REGION 18363 CMP DATE 12.1

CALCIUM PLAGE DATA									SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	6	18363	S27	E63	95	300	1.0										
82	05	7	18363	S27	E51	92	300	1.0										
82	05	8	18363	S27	E39	93	200	1.5										
82	05	9	18363	S27	E27	91	200	1.5										
82	05	10	18363	S27	E15	91	200	1.0										
82	05	12	18363	S27	W09	88	200	1.5										
82	05	15	18363	S27	W50	90	100	1.0										
82	05	16	18363	S26	W64	90	100	1.0										

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HALE REGION 18371 CMP DATE 12.4

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	9	18371	N08 E35	83	200	1.5									
82	05	10	18371	N08 E22	84	200	1.5									

HALE REGION 18365 CMP DATE 12.6

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	6	18365	N15 E75	83	300	1.0	23125	N14 E77	83	(AF)	3				
82	05	7	18365	N15 E63	80	500	2.5	23125	N13 E63	84	(AF)	3	R	20	1	AXX
82	05	8	18365	N15 E50	82	500	2.5									
82	05	9	18365	N15 E37	81	800	2.5									
82	05	10	18365	N16 E24	82	600	3.0									
82	05	12	18365	N17 W02	81	400	1.0									
82	05	15	18365	N17 W40	80	200	1.5									
82	05	16	18365	N17 W54	80	200	1.0									
82	05	17	18365	N17 W67	81	100	1.0									

HALE REGION 18364 CMP DATE 12.8

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	6	18364	S10 E75	83	200	1.0	Gvo-----	S08 E65				H	10	4	BXO
82	05	7	18364	S09 E65	78	1200	2.5		S08 E57				L	20	4	HRX
82	05	8	18364	S08 E54	78	800	2.5									
82	05	9	18364	S08 E40	78	1200	2.5									
82	05	10	18364	S08 E27	79	1200	2.5		S04 E29				B	480	40	DKI
82	05	12	18364	S08 W00	79	1200	3.0	23132	S05 E03	79	(AP)	2				
82	05	13	18364					23132	S05 W10	78	(AP)	2	H	10	2	AXX
82	05	15	18364	S08 W40	80	900	2.0									
82	05	16	18364	S08 W54	80	600	2.0									
82	05	17	18364	S08 W67	81	400	1.0									
82	05	18	18364	S10 W80	81	400	1.0									

HALE REGION 18366 CMP DATE 13.3

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	7	18366	N20 E72	71	200	1.0									
82	05	8	18366	N20 E60	72	200	1.0									
82	05	9	18366	N20 E47	71	200	1.0									
82	05	10	18366	N20 E33	73	100	1.0									
82	05	12	18366	N20 E07	72	100	1.0									

HALE REGION 18368 CMP DATE 14.3

CALCIUM PLAGE DATA								SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	8	18368	S15 E76	56	300	1.0									
82	05	9	18368	S15 E62	56	200	1.0									
82	05	10	18368	S15 E48	58	200	1.0									
82	05	12	18368	S14 E20	59	300	1.0									
82	05	15	18368	S14 W20	60	300	1.0									
82	05	16	18368	S14 W34	60	300	1.0									
82	05	17	18368	S14 W47	61	100	1.0									

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HALE REGION 18369 CMP DATE 15.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	9	18369	S18	E74	44	500	1.0										
82	05	10	18369	S17	E57	49	400	1.0										
82	05	12	18369	S17	E33	46	200	1.5										
82	05	15	18369	S18	W10	50	100	1.0										
82	05	16	18369	S18	W24	50	100	1.0										

HALE REGION 18370 CMP DATE 16.5

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	10	18370	N08	E73	33	200	1.0		N06	E79				H	80	1	HSX
82	05	11	18370						23129	N04	E66	29	(AP)	4	H	220	1	HAX
82	05	12	18370	N07	E50	29	400	2.0	23129	N04	E52	30	(AP)	5	H	130	1	HSX
82	05	13	18370						23129	N04	E39	29	(AP)	5	H	120	1	HHX
82	05	14	18370						23129	N03	E26	29	(BP)	5	P	180	3	DSO
82	05	15	18370	N06	E10	30	800	2.0	23129	N04	E12	29	(AP)	5	H	190	7	CSO
82	05	16	18370	N05	W04	30	700	2.0	23129	N03	W02	30	(BY)	5	B	80	1	HSX
82	05	17	18370	N04	W17	31	500	2.0	23129	N03	W15	31	(BP)	5	H	140	3	CSO
82	05	18	18370	N04	W28	29	300	1.5	23129	N03	W28	30	(AP)	5	H	120	1	HSX
82	05	19	18370	N04	W42	30	200	1.5	23129	N03	W42	31	(AP)	5	H	80	1	HSX
82	05	20	18370						23129	N03	W57	32	(AP)	5	H	100	1	HSX
82	05	21	18370	N04	W68	29	300	1.0	23129	N03	W70	32	(AP)	5	H	110	1	HSX
82	05	22	18370						23129	N03	W75	24	(AP)	4	H	100	1	HSX

HALE REGION 18374 CMP DATE 17.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18374	S13	E18	22	1000	3.5	23139	S14	E21	20	(B)	5	H	90	13	DAI
82	05	16	18374	S13	E04	22	1400	3.0	23139	S14	E07	21	(BY)	5	H	260	35	DAO
82	05	17	18374	S13	W07	21	1200	2.5	23139	S15	W07	23	(BY)	4	H	190	14	DAO
82	05	18	18374	S14	W20	21	1200	2.5	23139	S13	W21	23	(BY)	4	H	140	10	DSO
82	05	19	18374	S14	W33	21	900	3.0	23139	S13	W34	23	(B)	5	H	70	9	DSO
82	05	20	18374						23139	S13	W47	22	(B)	4	H	90	2	CAO
82	05	21	18374	S14	W58	19	900	2.5	23139	S13	W66	28	(AP)	4	H	90	2	CSO
82	05	22	18374	S15	W73	21	800	2.0	23139	S13	W79	28	(AP)	4	H	40	1	HSX

HALE REGION 18372 CMP DATE 17.6

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	12	18372	S17	E63	16	500	3.0	23133	S18	E66	16	(B)	3	H	10	3	AXX
82	05	13	18372						23133	S19	E53	15	(BP)	4	H	30	5	CRO
82	05	14	18372						23133	S18	E38	17	(AP)	4	P	10	3	BXO
82	05	15	18372	S18	E24	16	800	2.5	23133	S18	E26	15	(B)	3	H	20	4	BXO
82	05	16	18372	S18	E10	16	700	3.0	23133	S19	E13	15	(B)	2	H		1	AXX
82	05	17	18372	S18	W02	16	700	2.5	23133	S19	W05	21	(B)	4	H	10	7	BXO
82	05	17	18372	S18	W02	16	700	2.5	23144	S21	E05	11	(AF)	3	H		1	AXX
82	05	18	18372	S20	W12	13	500	2.5	23133	S18	W17	19	(AP)	2	H		1	AXX
82	05	19	18372	S20	W25	13	500	2.0	23133	S17	W31	20	(B)	4	H	20	6	BXO
82	05	21	18372	S20	W50	11	300	1.5		S19	W59				H		1	AXX

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HALE REGION 18373 CMP DATE 18.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	11	18373						23130	S03	E85	10	(AP)	3	H	250	1	HSX
82	05	12	18373	S04	E70	9	1200	2.5	23130	S03	E70	12	(AP)	4	H	230	1	HSX
82	05	13	18373						23130	S03	E57	11	(AP)	5	H	180	2	CSO
82	05	14	18373						23137	S06	E46	9	(B)	3	P	200	3	CAO
82	05	14	18373						23130	S04	E44	11	(BP)	5	P	200	3	CAO
82	05	15	18373	S04	E30	10	1400	2.0	23130	S03	E30	11	(AP)	5	H	220	1	HSX
82	05	16	18373	S04	E17	9	1100	2.5	23130	S03	E17	11	(AP)	5	H	260	5	CSO
82	05	16	18373	S04	E17	9	1100	2.5	23140	S07	E16	12	(AP)	2	H	260	5	CSO
82	05	17	18373	S04	E05	9	800	2.5	23130	S03	E04	12	(BP)	5	H	200	2	CSO
82	05	18	18373	S04	W06	7	700	2.5	23130	S03	W10	12	(AP)	5	H	200	3	HHX
82	05	19	18373	S04	W20	8	700	2.5	23147	S08	W19	8	(AF)	2	H		1	AXX
82	05	19	18373	S04	W20	8	700	2.5	23130	S02	W23	12	(AP)	5	H	200	2	HHX
82	05	20	18373						23130	S02	W37	12	(AP)	5	H	240	2	HHX
82	05	21	18373	S04	W45	6	700	2.0	23130	S02	W52	14	(AP)	5	H	210	2	HSX
82	05	22	18373	S04	W60	8	700	2.0	23130	S02	W64	13	(AP)	4	H	90	2	HAX
82	05	23	18373	S04	W74	9	400	1.0	23130	S02	W78	13	(AP)	4	H	140	1	HSX

HALE REGION 18375 CMP DATE 18.7

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	13	18375						23135	N08	E69	359	(B)	3	R	10	1	AXX
82	05	14	18375						23135	N08	E55		(B)	3	M	10	2	AXX
82	05	15	18375	N10	E38	2	300	2.0										
82	05	16	18375	N10	E24	2	200	2.0										
82	05	17	18375	N10	E12	2	100	2.0										
82	05	18	18375	N10	W00	1	100	1.5										
82	05	19	18375	N10	W13	1	100	1.0										

HALE REGION 18381 CMP DATE 19.4

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	16	18381	N24	E34	352	200	1.5										
82	05	17	18381	N24	E22	352	100	1.0										
82	05	18	18381	N24	E10	351	100	1.5										
82	05	19	18381	N24	W03	351	100	1.0										

HALE REGION 18376 CMP DATE 19.7

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	13	18376						23136	S26	E70	358	(AP)	3	H		1	AXX
82	05	14	18376						23136	S26	E58	357	(AP)	2	L		2	AXX
82	05	15	18376	S25	E50	350	700	2.0										
82	05	16	18376	S25	E36	350	700	2.0										
82	05	17	18376	S25	E24	350	600	1.5										
82	05	18	18376	S25	E14	347	600	1.5		S22	E04				B		2	BXO
82	05	19	18376	S25	W00	348	800	2.0										
82	05	21	18376	S27	W25	346	700	2.0										
82	05	22	18376	S27	W39	347	700	2.0										
82	05	23	18376	S27	W52	347	500	1.5										

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HALE REGION 18389 CMP DATE 20.9

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	19	18389	N18 E17	331	100	2.5		23148	N17 E17	332	(B)	3	B	10	1	HRX
82	05	20	18389						23148	N17 E05	330	(B)	3	H	10	5	BXO
82	05	21	18389	N18 W10	331	100	2.5		23148	N17 W13	335	(AP)	3	H	30	5	BXO
82	05	22	18389	N18 W24	332	300	2.5			N17 W25				H		1	AXX
82	05	23	18389	N18 W37	332	200	1.5										
82	05	24	18389	N18 W50	332	100	1.5										

HALE REGION 18377 CMP DATE 21.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	14	18377						23138	S12 E80	335	(AF)	2	P	20	1	HAX
82	05	15	18377	S10 E66	334	700	2.5		23138	S11 E65	336	(B)	3	H	10	2	BXO
82	05	16	18377	S12 E52	334	800	2.0		23138	S12 E51	337	(AF)	4	H	30	2	CRO
82	05	17	18377	S11 E40	334	700	2.0										
82	05	18	18377	S10 E29	332	700	2.0										
82	05	19	18377	S12 E15	333	1100	2.0										
82	05	21	18377	S12 W10	331	800	2.0										
82	05	22	18377	S13 W25	333	800	2.5										
82	05	23	18377	S13 W38	333	600	2.0			S17 W40				P	10	2	HRX
82	05	24	18377	S13 W52	334	500	1.5			S16 W53				P	10	1	AXX
82	05	26	18377	S13 W78	333	400	1.0										

HALE REGION 18388 CMP DATE 21.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	21	18388	S20 W08	329	100	1.5		23150	S20 W12	334	(AP)	3	P		1	AXX
82	05	22	18388	S20 W23	331	300	2.5		23150	S21 W23	332	(B)	4	H	50	7	CAO
82	05	23	18388	S22 W36	331	400	2.5		23150	S20 W37	332	(AP)	4	H	10	3	BXO
82	05	24	18388	S22 W50	332	400	1.5		23150	S20 W51	334	(AP)	2	H		1	AXX
82	05	26	18388	S22 W76	331	200	1.0										

HALE REGION 18378 CMP DATE 21.6

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18378	N12 E70	330	700	1.5										
82	05	16	18378	N13 E60	326	1300	2.0										
82	05	17	18378	N13 E50	324	1700	2.0										
82	05	18	18378	N12 E38	323	1700	2.5										
82	05	19	18378	N12 E25	323	2300	2.5										
82	05	21	18378	N12 W01	322	3000	2.5										
82	05	22	18378	N11 W16	324	2500	2.5										
82	05	23	18378	N11 W30	325	2500	2.5										
82	05	24	18378	N11 W43	325	2500	3.0										
82	05	26	18378	N13 W67	322	1700	2.5										
82	05	27	18378	N13 W80	320	1200	1.5										

HALE REGION 18380 CMP DATE 21.7

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18380	S14 E75	325	200	1.0										
82	05	16	18380	S14 E62	324	200	1.5										
82	05	17	18380	S14 E50	324	100	2.0			S13 E47				M		1	AXX
82	05	18	18380	S14 E38	323	200	2.0										
82	05	19	18380	S14 E24	324	200	2.0										
82	05	21	18380	S15 W00	321	200	2.0										

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HALE REGION 18380 (CONT) CMP DATE 21.7

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	22	18380	S16	W17	325	100	1.5										
82	05	23	18380	S17	W30	325	100	1.0										
82	05	24	18380	S18	W44	326	100	1.0										
82	05	26	18380	S18	W69	324	100	1.0										

HALE REGION 18379 CMP DATE 22.0

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	15	18379	N20	E75	325	500	1.0										
82	05	16	18379	N24	E63	323	700	1.5										
82	05	17	18379	N24	E50	324	2200	2.0										
82	05	18	18379	N24	E40	321	2000	2.0										
82	05	19	18379	N23	E30	318	2300	2.0										
82	05	21	18379	N24	E04	317	2300	2.0										
82	05	22	18379	N24	W10	318	2200	2.0										
82	05	23	18379	N23	W22	317	2400	2.5										
82	05	24	18379	N21	W35	317	2500	2.5										
82	05	26	18379	N24	W65	320	1500	2.5										
82	05	27	18379	N24	W78	318	500	2.0										

HALE REGION 18383 CMP DATE 22.6

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	16	18383						23142	N23	E80	308	(AP)	2	H	70	1	HSX
82	05	17	18383	N23	E70	304	1000	2.5	23142	N21	E68	308	(BP)	3	H	150	7	DSO
82	05	18	18383	N23	E55	306	2000	2.5	23142	N21	E54	308	(B)	4	H	270	10	DSI
82	05	19	18383	N23	E40	308	2800	3.5	23142	N21	E40	309	(D)	5	H	300	27	EAI
82	05	20	18383						23142	N21	E29	306	(D)	5	H	1000	37	EKI
82	05	21	18383	N23	E15	306	3000	3.5	23142	N21	E13	309	(D)	5	H	740	49	EKI
82	05	22	18383	N22	W02	310	3500	3.5	23142	N21	W01	310	(B)	4	H	580	62	EKI
82	05	23	18383	N21	W14	309	3200	3.5	23142	N21	W13	308	(BY)	5	H	570	42	EAC
82	05	24	18383	N20	W27	309	3400	3.5	23142	N21	W26	309	(B)	4	H	300	42	EAC
82	05	25	18383						23142	N21	W40	309	(B)	4	H	310	27	EKI
82	05	26	18383	N22	W52	307	3500	3.5	23142	N21	W53	309	(B)	4	H	70	15	DAI
82	05	27	18383	N20	W65	305	3000	3.5	23142	N21	W65	308	(BY)	4	B	40	5	CRO
82	05	28	18383						23142	N15	W78	308	X	3	H	270	15	DKI

HALE REGION 18382 CMP DATE 23.1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	16	18382	N15	E77	309	500	1.5	23143	N14	E80	308	(AP)	2	H	190	1	HSX
82	05	17	18382	N15	E66	308	700	1.5	23143	N13	E67	309	(AP)	4	H	160	1	HSX
82	05	18	18382	N14	E58	303	700	1.5	23143	N14	E55	307	(AP)	5	H	230	1	HHX
82	05	19	18382	N14	E45	303	900	1.5	23143	N13	E40	309	(B)	5	H	140	6	CSO
82	05	20	18382						23143	N13	E28	307	(BP)	5	H	230	4	CHO
82	05	21	18382	N14	E20	301	900	2.0	23143	N13	E13	309	(AP)	5	H	230	3	CHO
82	05	22	18382	N14	E05	303	800	2.5	23143	N13	E01	308	(AP)	5	H	200	2	CSO
82	05	23	18382	N13	W10	305	600	2.5	23143	N14	W13	308	(AP)	5	H	210	7	CSO
82	05	24	18382	N13	W24	306	800	2.5	23143	N14	W26	309	(BP)	5	H	240	7	CSO
82	05	25	18382						23143	N14	W38	307	(B)	5	H	210	22	DSI
82	05	26	18382	N13	W52	307	1500	3.0	23143	N14	W52	308	(BY)	5	H	100	27	DSI
82	05	27	18382	N13	W65	305	1500	2.5		N16	W64				B	180	15	DAI

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HALE REGION 18384 CMP DATE 23.3

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	17	18384	S13	E77	297	200	1.5	23145	S12	E77	299	(B)	2	H	10	2	AXX
82	05	18	18384	S13	E65	296	800	2.0	23145	S12	E62	300	(B)	3	H	20	6	BXO
82	05	19	18384	S13	E49	299	1100	2.5	23145	S13	E47	302	(B)	3	H	30	5	CRO
82	05	21	18384	S13	E24	297	800	2.5		S12	E22				B		2	BXO
82	05	22	18384	S13	E08	300	700	2.5										
82	05	23	18384	S13	W06	301	500	2.0		S12	W09				H		2	AXX
82	05	24	18384	S13	W20	302	600	2.0	23155	S12	W24	307	(AP)	3	H	10	3	BXO
82	05	26	18384	S13	W46	301	400	2.0										
82	05	27	18384	S13	W60	300	400	1.5										

HALE REGION 18386 CMP DATE 23.8

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	18	18386	N25	E75	286	1200	2.0	23146	N24	E68	294	(B)	4	H	60	1	HSX
82	05	19	18386	N25	E56	292	1800	2.5	23146	N22	E60	289	(B)	4	H	40	3	CSO
82	05	20	18386						23146	N23	E35	300	(AP)	4	H	30	5	BXO
82	05	21	18386	N25	E30	291	1500	2.0										
82	05	22	18386	N25	E15	293	1800	2.5										
82	05	23	18386	N25	E01	294	1500	2.0										
82	05	24	18386	N25	W13	295	1800	2.5										
82	05	26	18386	N25	W36	291	900	1.5										
82	05	27	18386	N24	W50	290	800	2.5										

HALE REGION 18385 CMP DATE 23.9

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	18	18385	S05	E74	287	200	1.0										
82	05	19	18385	S06	E59	289	100	1.0										
82	05	21	18385	S06	E33	288	100	1.5										
82	05	22	18385	S07	E17	291	200	2.5										
82	05	23	18385	S07	E03	292	100	2.0										
82	05	24	18385	S07	W11	293	200	2.0										
82	05	26	18385	S09	W39	294	100	1.5										
82	05	27	18385	S09	W52	292	100	1.0										

HALE REGION 18387 CMP DATE 24.5

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	19	18387	N24	E65	283	600	2.0	23149	N22	E63	286	(AP)	4	H	40	3	CSO
82	05	20	18387						23149	N22	E49	286	(B)	3	H	30	5	BXO
82	05	21	18387	N24	E42	279	700	2.5	23149	N23	E22	300	(AP)	4	H	30	5	BXO
82	05	22	18387	N24	E27	281	1000	2.5	23153	N23	E25	284	(B)	3	H	40	7	BXO
82	05	23	18387	N24	E12	283	1100	2.5	23153	N23	E11	284	(B)	4	H	10	5	BXO
82	05	24	18387	N24	W02	284	1000	2.5	23153	N23	W01	284	(BF)	4	H	30	9	CRO
82	05	25	18387						23153	N23	W23	292	(B)	3	H		1	AXX
82	05	26	18387	N25	W25	280	1100	2.5	23153	N23	W25	281	(B)	2	H	10	4	BXO
82	05	27	18387	N24	W36	276	1000	2.5		N26	W30				L	10	4	BXO

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HALE REGION 18392 CMP DATE 24.9

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	22	18392	S18 E28	280	300	2.5									
82	05	23	18392	S19 E16	279	200	2.0									
82	05	24	18392	S20 E03	279	100	1.5									
82	05	25	18392					23156	S20 W12	281	(B)	4	H		1	AXX
82	05	26	18392	S20 W24	279	1000	3.5	23156	S20 W25	281	(B)	4	H	70	18	DSO
82	05	27	18392	S20 W37	277	1700	3.5	23156	S20 W37	280	(B)	5	B	140	23	DSI
82	05	28	18392					23156	S20 W49	279	(B)	5	H	390	27	DKI
82	05	29	18392					23156	S20 W62	279	(B)	4	H	390	6	EKO

HALE REGION 18390 CMP DATE 25.8

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	21	18390	S22 E56	265	200	3.0	23151	S23 E53	269	(AP)	3	H	40	6	BXO
82	05	22	18390	S22 E40	268	500	3.5	23151	S23 E41	268	(AP)	4	H	30	4	DAO
82	05	23	18390	S22 E27	268	600	3.5	23151	S23 E27	268	(B)	4	H	10	5	BXO
82	05	24	18390	S23 E15	267	600	2.5	23151	S23 E16	267	(AF)	3	H		2	AXX
82	05	25	18390					23151	S19 E14	255	(B)	3	H	20	8	DSO
82	05	26	18390	S24 W13	268	700	2.5	23151	S19 E01	255	(B)	3	H	40	13	DSO
82	05	27	18390	S24 W26	266	600	2.0	23151	S19 W11	254	(B)	3	B	40	9	DSO
82	05	28	18390					23151	S19 W23	253	(B)	2	H	80	1	CRO
82	05	29	18390					23151	S19 W32	249	(B)	2	H	10	3	AXX

HALE REGION 18391 CMP DATE 27.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	21	18391	S18 E75	246	300	1.0	23152	S20 E68	254	(AP)	4	H	40	3	CRO
82	05	22	18391	S18 E58	250	700	2.5	23152	S20 E55	254	(B)	4	H	50	4	CAO
82	05	23	18391	S18 E44	251	700	2.5	23152	S20 E42	253	(B)	4	H	20	5	BXO
82	05	24	18391	S18 E30	252	700	2.5	23152	S20 E28	255	(B)	4	H	10	2	BXO
82	05	26	18391	S20 E03	252	1300	3.0		S19 E01				H	40	13	DSO
82	05	27	18391	S20 W10	250	1600	3.0		S19 W11				B	40	9	DSO
82	06	1	18391	S20 W80	257	600	1.5									

HALE REGION 18393 CMP DATE 28.2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	23	18393	N17 E60	235	200	1.5									
82	05	24	18393	N17 E47	235	100	1.0									

HALE REGION 18397 CMP DATE 28.8

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	27	18397	N07 E13	227	100	3.5									
82	06	1	18397	N07 W63	240	100	1.0									

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HALE REGION 18394 CMP DATE 30.1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	23	18394	S15	E80	215	500	1.0	23154	S16	E80	215	(AP)	4	H	50	1	HSX
82	05	24	18394	S16	E70	212	800	2.0	23154	S16	E65	218	(AP)	4	H	110	1	HSX
82	05	25	18394						23154	S15	E52	217	(AP)	4	H	30	1	HSX
82	05	26	18394	S20	E45	210	1600	2.5	23154	S15	E37	219	(AP)	2	H	20	1	HSX
82	05	27	18394	S20	E30	210	1500	2.5	23154	S15	E24	219	(AP)	5	B	20	1	HSX
82	05	28	18394						23154	S15	E12	218	(AP)	4	H	20	1	HSX
82	05	29	18394						23154	S15	W01	218	(AP)	4	H	20	1	HSX
82	05	29	18394						23159	S20	W03	220	(B)	2	H		2	BXO
82	06	1	18394	S20	W40	217	1500	2.0	23154	S16	W42	219	(AP)	4	B	10	1	HRX
82	06	2	18394	S20	W53	216	1500	2.0	23154	S16	W55	219	(AP)	3	H		1	AXX
82	06	3	18394	S20	W60	210	800	2.0	23154	S14	W62		(AF)	3				

HALE REGION 18396 CMP DATE 30.9

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	26	18396	S04	E55	200	1000	3.5	23158	S03	E54	202	(B)	3	H	20	6	BXO
82	05	27	18396	S04	E40	200	1500	4.0	23158	S03	E40	203	(B)	4	B	120	17	DSI
82	05	28	18396						23158	S03	E28	202	(B)	5	H	500	34	EAI
82	05	29	18396						23158	S03	E14	203	(B)	5	H	490	30	EKI
82	06	1	18396	S04	W30	207	2500	3.5	23158	S05	W27	204	(B)	5	B	120	7	EAO
82	06	2	18396	S04	W43	206	2700	3.5	23158	S04	W43	207	(B)	5	H	160	7	EAO
82	06	3	18396	S04	W56	206	2600	3.5	23158	S04	W55	206	(B)	4	H	110	8	EAO
82	06	4	18396	S04	W70	207	2300	3.0	23158	S04	W67	204	(BP)	4	H	100	3	CAO
82	06	5	18396	S04	W85	208	900	2.0	23158	S04	W80		B	2	H		1	AXX

HALE REGION 18400 CMP DATE 31.2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	05	26	18400	N08	E60	195	900	2.0										
82	05	27	18400	N08	E45	195	900	2.0										
82	06	1	18400	N08	W20	197	900	1.5										
82	06	2	18400	N08	W33	196	1000	2.0										
82	06	3	18400	N08	W46	196	700	1.0										
82	06	4	18400	N08	W60	197	600	1.0										
82	06	5	18400	N08	W74	197	500	1.0										

HALE REGION 18399 CMP DATE 31.6

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
82	06	1	18399	S15	W14	191	100	1.5		S16	W14				R	10	3	BXO
82	06	2	18399	S16	W27	190	100	1.0		S15	W22				M	20	6	BXO
82	06	3	18399	S16	W39	189	100	1.0										
82	06	4	18399	S16	W52	189	100	1.0										

NOTE: Return of region information and contiguous plage information not available at time of publication. This information should appear as an addendum in the next issue.

No solar magnetograms were made at Kitt Peak National Observatory on May 3-5, 9, and 31, 1982.
No Mt. Wilson sunspot data were available for May 4, and 8-10, 1982.

DAILY CALCIUM PLAGE INDEX

MAY 1982

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
82	5	1	15.8	82	5	11	*	82	5	21	34.1
82	5	2	19.1	82	5	12	18.0	82	5	22	39.2
82	5	3	*	82	5	13	*	82	5	23	34.2
82	5	4	*	82	5	14	*	82	5	24	33.8
82	5	5	*	82	5	15	13.9	82	5	25	*
82	5	6	27.0	82	5	16	15.7	82	5	26	31.6
82	5	7	31.0	82	5	17	15.7	82	5	27	31.0
82	5	8	29.9	82	5	18	18.9	82	5	28	*
82	5	9	32.4	82	5	19	30.0				
82	5	10	25.5	82	5	20	*				

* NO OBSERVATIONS

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
01	2307	0006	2320	1-	3				1		2		2301	18347
02	0338	0500	0359	1-	1				1				0332	18350
02	1517	1735	1530	2+	5	4		1	1		13		1514E	18347
02	1721	1745	1727	1-	3						2		1721	18347
03	0435	0506	0442	1-	1				1				0422	No data
03	0622	0643	0628	1-	3				1		1		NF	
03	1615	1725	1628	1-	5	2			1		8		1616	No data
03	1837	1900	1845	1-	5				1		10		1831	No data
03	1900	1953	1912	1-	5	2			2		13		1900	No data
03	2033	2122	2041	1-	3	1			1		4		2032	No data
03	2347	0002D	2352	1-	3				1		2		2347	No data
04	0006	0032	0010	1-	1				1				0003	No data
04	0232	0416	0306	1	1				1				NF	
05	2206	2220	2210	1	1	1							*	
06	0337	0445	0400	2	3						2		NF	
06	0524	0552	0532	1-	1				1				0524E	18356
07	0917	1020	0926	1-	5	2		1	1		3		*	
08	1055	1110	1100	1-	3						2		*	
10	1310	1335	1320	1-	5	1		1			5		1312E	18356
11	1734	1845	1750	3	1	1							*	
12	0158	0338	0210	2	3	1			1		4		0159	18356
14	1619	1733	1636	1-	5				1		11		*	
16	0704E	0814	0721	1-	3				1		1		NF	
17	1030	1125	1045	1-	3				1		1		NF	
17	2320	0048	2330	1-	5	1			1		6		2321	18382
18	0205	0425	0230	2	3				1		5		0206	18384
18	0956	1105	1007	1-	3				1		3		*	
18	1213	1350	1230	1	5	3			1		11		NF	
18	2123	2200	2130	1	3						2		NF	
19	0520	0709	0547	2+	3	2			1		2		NF	
19	1735	1850	1751	1-	5	1			1		7		1733	18383
19	1812	1855	1821	1-	5				1		9		NF	
19	1938	2000	1945	1-	3						2		1933	18383
19	2046	2136	2058	1-	5	1			1		7		2041E	18383
20	0146	0256	0200	1+	3	1			1		4		NF	
20	0326	0418	0342	1-	3			1	1				NF	
20	0533	0716	0544	2	5	2			1		3		0533	No data
20	1414	1649	1427	3	5	2		1	1		13		1410	No data
20	2114	2203	2130	1-	3	1					3		2111	No data
21	0242	0306D	0251	1-	1				1				0240	18386
21	0306E	0454	0336	1+	3			1	1				0307E	18383
21	0925	1016	0942	1-	3				2		2		NF	
21	1413	1625	1437	3	5	3			2		15		1418E	18383
21	1858	1915	1900	1-	1						1		1855	18383
21	1957	2106	2011	1-	5	1			1		12		1943	18383
21	2152	2305	2208	1	5	2			1		11		2156	18383
22	0032	0213	0050	2	3	1			1		7		0035	18383
22	0223	0249D	0230	1-	3			1	1		2		NF	
22	0250E	0356	0305	2	3	1			1		5		NF	
22	0434	0533	0447	1-	3				1		1		0435	18383
22	0539	0640	0548	1+	3	1			1				*	
22	0715	0844	0723	2+	5	2		1	1		8		0722E	18383
22	0858	1009	0907	1-	3				1		2		NF	
22	1150	1223	1155	1-	3				1		3		*	
22	1440	1520	1436	1-	5				1		11		1435	18383
22	1700	1836	1708	2+	5	4			1		15		NF	

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
23	0212	0243D	0229	1-	3			1	1				0211	18383
23	0243E	0400	0256	2+	3				1		5		NF	
23	1240	1417	1255	1+	5	2			1		15		1244	18383
23	1626	1720	1638	1-	5	1			1		11		1528	18383
23	1843	1950	1849	1	5	2					16		1843	18383
23	2123	2152	2130	1-	1				1				2125	18383
25	1247	1333	1300	1-	3	1			1		6		1235E	No data
25	1903	1933	1908	1-	3				1		5		1905	No data
26	0136	0224	0152	1-	1				1				0138	18382
26	0345	0454	0353	1-	3				1		1		0335	18388
26	0703E	0835	0709	2+	5	2		1	1		8		0700	18382
26	1208	1326	1234	1-	3	1			1		4		*	
26	1725	1800	1738	1-	3				1		12		NF	
26	1823	1827D	1827	1-	1				1				1822	18382
26	1845	1907	1850	1-	3				1		2		1847	18395
26	2107	2203	2123	1-	3				1		1		2107	18379
27	0346	0426	0358	1-	1				1				0348	18392
27	0649	0724	0655	1-	1				1				0643	18383
27	0823	0915	0839	1-	1				1				0824	18395
27	0938	1030	0945	1-	3				2		3		*	
27	1158	1245	1207	1-	3				1		1		*	
27	1327	1346	1330	1-	3				1		1		1331E	18396
27	1607	1642	1614	1-	3				1		6		NF	
27	1840	1900	1845	1-	3						2		1826	18396
28	0111	0220	0118	2+	3	1			1		5		0104	No data
28	0221	0302	0232	1-	3				1		2		0222	No data
28	0303	0444	0311	1+	3				1		5		0303	No data
28	0330	0350	0337	1-	3						4		0327	No data
28	0454	0538	0511	1-	1				1				0448	No data
28	1234	1308	1245	1-	3	1					3		1232E	No data
28	1422	1445	1427	1-	3				1		14		1423	No data
28	1527	1550	1529	2	5	1			1		18		1529	No data
28	1637	1650	1640	1-	3				1		4		1636	No data
28	1705	1820	1714	2	5	2			1		16		1706	No data
28	1825	1850	1828	1-	3						5		1823	No data
28	1920	2006	1928	1-	3				1		9		1921	No data
28	2216	2256	2223	1-	1				1				2217	No data
28	2340	0054	2351	1-	3				1		5		NF	
29	0131	0204	0136	1-	3				1		3		0131E	No data
29	0204	0300	0214	2	3	1		1	1		2		0204	No data
29	0304	0354	0325	1-	3				1		1		0302	No data
29	0401	0444	0410	1-	3				1		1		0356	No data
29	0518	0544	0523	1-	1				1				0504	No data
29	0605	0828	0618	2+	5	2			1		7		*	
29	0851	0942	0859	1-	3	1			1		1		0847	No data
29	1021	1044	1025	1-	3				1		2		*	
29	1257	1318	1305	1-	1						9		NF	
29	1320	1345	1328	1	5	2			1		13		*	
29	1410	1445	1415	1-	3				1		2		NF	
29	1650	1745	1702	2	3	4					15		NF	
29	2022	2056D	2028	1-	5				1		14		NF	
29	2056E	2146D	2108	1	5	1			1		14		NF	
29	2146E	0004	2208	3	5	2			1		15		2144	No data
29	2310	2330	2313	1-	3						2		NF	
30	0114	0148	0121	1	3	1			1		6		0116	No data
30	0335	0457	0345	3	3	1			1		4		0340	No data
30	0546	0750	0606	3	5	3		1	1		8		NF	
30	1013	1225	1027	2+	5	3		1	1		7		*	
30	1932	2105	1954	1-	5	1			1		13		*	
30	2235	2356	2252	2	5	2			1		14		*	
31	0304	0424	0316	2+	3	1			1				0310E	No data
31	1425	1450	1432	1-	1			1	1				1356	No data

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1982

OBSERVATORIES REPORTING FOR MAY 1982:

Ayrshire, Scotland (AY)	SES	Mayfield, Village, Ohio USA (A28)	SES
Darmstadt, GFR (DA)	SWF	Missoula, Montana USA (A31)	SES. SWF
Edenvale, South Africa (A52)	SES	Panska Ves, Czechoslovakia (PU)	SEA. SWF. SFA
Eureka, Montana USA (A55)	SES	Paterson, New Jersey USA (A46)	SES
Farsta, Sweden (FS)	SES	Portage, Michigan USA (A51)	SES
Frenchtown, Montana USA	SES	Roswell, New Mexico USA (RW)	SES
Glenorchy, Tasmania, Australia (GN)	SES, SWF	San Antonio, Texas USA (SA)	SES
Hicksville, New York USA (HV)	SES	Sao Paulo, Brasil (UM)	SES, SPA
Hiraiso, Japan (HI)	SWF	Simi Valley, California USA (A57)	SES
Hobart, Tasmania, Australia (TA)	SEA	St. Cloud, Minnesota USA (SC)	SES
Houston, Texas USA (A50)	SES	Sofia, Bulgaria (SF)	SEA
Huancayo, Peru (HU)	SWF	Tavares, Florida USA (A49)	SES
Inubo, Japan (IN)	SPA	Trenton, New Jersey USA (NJ)	SES
Kasugai, Japan (KA)	SPA	Tucson, Arizona USA (A9)	SES
Lake Hiawatha, New Jersey USA (A32)	SES	Upice, Czechoslaovakia (UI)	SEA
Latrobe, Pennsylvania USA (A19)	SES	Valley Cottage, New York USA (A1)	SES
Louisville, Kentucky USA (A26)	SES	Vsetin, Czechoslovakia (VS)	SEA
Maui, Hawaii USA (MI)	SWF		

* No Flare Patrol
NF No Flare Reported
Observations are not necessarily continuous for each reporting station.

SIDs BY HALE REGION

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REGION																															
18347	1	2																													
18350		1																													
18356						1				1		1																			
18379																										1					
18382																	1														
18383																			3		5	4	5			3	1				
18384																		1													
18386																					1										
18388																										1					
18392																											1				
18395																										1	1				
18396																											2				
NO FLARE			1	1		1										1	1	2	2	2	1	4	1			1	1	1	6	1	
NO FLARE PATROL					1		1	1			1			1				1				2				1	2		3	3	
NO DATA			6	1																3					2			13	7	2	2
EVENT TOTALS	1	3	7	2	1	2	1	1		1	1	1		1		1	2	4	5	5	7	10	6		2	8	8	14	16	6	2

PIONEER XII (VENUS ORBITER)
Interplanetary Magnetic Field Magnitudes

MAGNETIC FIELD MAGNITUDES

MAY 1982

DAY	TIME	BMAG (GAMMAS)
1	13:40:50	1.92
2	13:41:50	16.14
3	13:36:00	15.46
4	13:36:30	14.03
5	13:36:30	13.69
6	13:36:20	18.77
7	13:35:50	16.24
8	13:35:50	10.11
9	13:36:00	9.06
10	13:41:50	11.31
11	13:35:40	7.86
12	13:35:50	3.85
13	13:36:40	15.71
14	13:35:50	11.92
15	13:40:30	9.63
16	13:41:10	7.64
17	13:35:50	13.01
18	13:36:10	15.99
19	13:35:40	20.50
20	13:35:40	14.36
21	13:36:50	10.31
22	13:36:10	15.67
23	13:35:50	11.04
24	13:36:10	11.19
25	13:35:50	10.27
27	13:36:20	8.98
28	13:36:10	9.20
29	13:35:50	15.12
30	13:36:00	14.07
31	13:36:00	16.92

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS										SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
01	0000	0729	CULG				0240	0240.5						IIIG,W
			CULG	0544.5	0545	2								DCIM
			CULG				0557							IIIB,W
	1306	2250	HARV				1955		1					IIIB
			HARV				2002		2					IIIG
			HARV				2002		2					IIIG
	2030	2400	CULG				2227.5							IIIB,W
			CULG				2242.5	2243						IS,W
02	0000	0729	CULG				0328.5	0329.5	3	0328.5	0329	2		IIIG
			LEAR				0328.7	0334.2	2					V
			PALE				0328.8	0332.2	2					G
			CULG				0329.5	0335	2					IIIGG,U
			CULG				0339.5	0433						IIIN,W
			CULG				0349	0350	1					IIIG
			LEAR				0349.7	0349.8	1					III
			LEAR				0358.7	0408.0	2					CONT
			LEAR				0419.7	0419.8	1					III
	0442	0608	WEIS											
			CULG				0645							IIIB,W
			HARV	1523	1526	1							IV	
	1253	2300	HARV	1523		2	1525	1528	1					IIIG
	1047	1758	WEIS				1523.8	1528.3	2					IIIG
			HARV				1534	1537	2					UNCLF
			WEIS				1539.9	1540	2					IIIG
			HARV				1626		1	1626		1		IIIB
			WEIS				1626.1	1626.3	2					IIIB
			HARV				1700		1	1700		1		IIIB
			WEIS				1700.1	1700.3	2					IIIB
			HARV				1819		2					IIIG
			HARV				1902		2					IIIB
	2029	2400	CULG				2124.5		1					IIIB
			CULG	2327.5	2328									DCIM,W
03	0000	0729	CULG				0121	0124						IIIN,W
	0515	1722	WEIS				0935.2	0935.3	1					IIIB
			WEIS				0946.9	0947.9	1					IIIG
			WEIS				1011.1	1011.2	1					IIIB
			WEIS				1422.0	1422.2	2					IIIB
	1253	2255	HARV	1621	1640	1								INW
	0000	2400	CULG				2151	2256						IIIN,W
04			CULG	0231	0252.5	1								IN
	0000	0729	CULG				0231	0250						IN,W
			CULG				0233.5	0310						IIIS,W
			CULG	0234	0252.5									IIIN,W
			LEAR				0235.3	0255.2	1					G
			CULG				0235.5	0355	1					IIIN
			CULG				0250	0321	1					IS
			CULG				0254.5		2					IIIB
			LEAR				0255.2	0330.0	1					CONT
			LEAR				0302.6	0302.7	1					III
			CULG				0310	0355						IIIN,W
			CULG				0321	0355						IS,W
			CULG	0455	0708	1								IN
	0515	1758	WEIS											
	1253	2245	HARV				1311	1713	1					INW
			HARV	1651	1653	2			2					IIIG
	2029	2400	CULG	2041	2357	1								IN
			CULG				2053	2144						IIIN,W
05	0000	0647	CULG	0038.5	0110									IN,W
			CULG	0106.5	0107.5		0107	0107.5						IIIG,W
	0438	1203	WEIS				0608	1324	1					IN
	1206	1801	WEIS											
	1253	2250	HARV				1549	1634	1					IN
	2100	2400	CULG	2227	2400	1	2244	2400	1					IS
			CULG				2244	2344						IIIN,W
06			CULG				0000	0575	1					IN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
06	0000	0729	CULG	0000	0729		0000	0629					IS,W
			CULG				0005	0720					IIIN,W
			CULG				0205	0315	1				IS
			LEAR				0209.0	0330.0	1				CONT
	0434	1803	WEIS				0502	1751	3				IS
			CULG				0515	0729	1				IS
			WEIS				0630	1803	3				CONT
			WEIS				0720	1641	2				IIIN
	1254	2245	HARV										
			CULG				2040	2400	2				IS,C,DC
	2029	2400	CULG	2040	2400	1							IS
			CULG				2056	2400					IIIS,W
			CULG				2105.5	2341	1				IIIN
			CULG				2140	2200	2				IIIS
			CULG	2159	2400	1							CONT
			CULG				2235		2				IIIB
07	0000	0729	CULG	0000	0727.5	1	0000	0105	2				IS,C,DC
			CULG				0000	0055					IIIS,W
			CULG				0008	0245.5	1				IIIN
			LEAR				0024.0	0938.0	1				CONT
			CULG				0036.5		2				IIIB
			CULG				0055	0200					IIIN,W
			CULG				0105	0205	1				IS,C
			CULG				0200	0505					IIIS,W
			CULG				0205	0500	2				IS,C,DC
			CULG				0250	0330	2				IIIS
			CULG				0500	0705	1				IS,DC
			CULG				0505	0729					IIIN,W
	0507	1810	WEIS				0514	1200	2				IN
			WEIS				0515	1725	1				IIIN
	1253	2300	HARV				1253	1425	1				IN
			HARV	1356	2255	1							INW
			HARV				1425	1654	2				I
			HARV				1654	2012	1				IN
			HARV				2012	2052	2				I
	2029	2400	CULG	2039	2400	1							IS,C
			CULG				2039	2336	1				IS,DC
			CULG				2039	2336					IIIS,W
			CULG				2108	2222	1				IIIN
			HARV				2252	2300	1				I
			CULG				2336	2400	1				IN
08	0000	0728	CULG	0000	0150		0000	0135					IN,W
			CULG				0001	0706					IIIN,W
			CULG	0150	0706	1	0135	0706	1				IS
	0430	1202	WEIS				0431	1415	1				IS
	1211	1855	WEIS				0702	1800	2				IIIN
			LEAR				0717.1	0718.9	1				III
	1253	2255	HARV				1304	2112	1				IN
			HARV	1322	1913	1							INW
			HARV				1723	1724	2				IIIB
			HARV				1759		2				IIIG
			HARV				1805	1806	2				IIIB
			PALE				1936.2	1936.5	2				III
	2029	2400	CULG	2039	2110	1	2040	2130	1				IS,DC
			CULG				2041.5	2400					IIIN,W
			CULG				2048		2				IIIB
			CULG	2110	2400		2130	2400					IN,W
			CULG				2205.5		1				IIIG
09	0000	0728	CULG				0000	0505					IN,W
			CULG				0000	0650					IIIN,W
			CULG				0525	0728	1				IS,DC
	0531	1807	WEIS										
	1253	2240	HARV										
	2029	2400	CULG	2040	2310								IN,W
			CULG				2042	2400	1				IS
			CULG				2043	2312					IIIN,W
			CULG	2310	2400								IS,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
09			CULG				2312	2400					IIIS,W
10	0000	0728	CULG	0000	0715		0000	0107					IS,W
			CULG				0000	0300					IIIS,W
			CULG				0107	0710	1				IS,DC
			CULG				0300	0705					IIIN,W
			CULG	0555	0556	2							DCIM
	0622	1806	WEIS				0805	1153	1				IN
			WEIS	0938.4	0938.8	2							RS
	1253	2255	HARV				1736	1929	1				IN
	2029	2400	CULG	2041	2117								IN,W
			CULG				2041	2400					IS,W
			CULG				2046	2351					IIIN,W
			HARV	2228		2							IIIG
11	0000	0728	CULG				0000	0220					IS,W
			CULG				0220	0721					IN,W
			CULG	0306	0307	1							IIG
			CULG	0321	0322	1							DCIM
			CULG	0522	0621								IIIN,W
			CULG	0711.5	0712	2							DCIM
	0430	1137	WEIS				0948.7	0949.7	2				DCIM
	1141	1807	WEIS										
	1253	2250	HARV	1306		1							IW
	2028	2400	CULG				2047.5	2400					IIIN,W
			CULG				2048.5	2219	1				IIIN
			CULG	2103	2304								IN,W
12	0000	0728	CULG	0000	0315								IN,W
			CULG				0025	0542					IIIN,W
			CULG	0532		1							IIIB
			CULG	0542.5	0543		0542.5	0543					IIIG,W
			CULG				0616.5	0617	1				IIIG
	0428	1314	WEIS				1229.7	1230.4	2				IIIG
			WEIS				1233.2	1233.3	1				IIIB
			WEIS				1235.1	1235.2	2				IIIB
	1423	1807	WEIS				1522.4	1526.3	2				IIIG
	1253	2300	HARV	1851	1852	1							IIIG
			HARV	2030	2031	2							IIIG
	2028	2400	CULG				2058.5	2251					IIIN,W
			CULG	2123		1	2123		1				IIIB
			CULG				2153	2154.5	1				IIIG
			CULG	2248	2257								DCIM,N
			CULG				2248.5	2249.5	2	2248.5	2049	1	IIIG
			CULG				2248.5	2252	1				IIIGG
13	0000	0710	CULG	0501	0502.5								IIIN,W
	1253	2300	HARV										
	0524	1808	WEIS				1310.9	1311.0	1				IIIB
	2028	2400	CULG				2053	2114					IN,W
14	0000	0728	CULG										
	0621	1228	WEIS										
	1259	2245	HARV				1402	1403	1				I
	1430	1808	WEIS										
			HARV				1435	1438	2				I
			HARV				1439		1				IIIB
			HARV				2003	2245	1				IN
	2028	2400	CULG				2046	2324					IN,W
			CULG	2046	2400	1							IN
			CULG				2101	2355					IIIN,W
			HARV				2206		2				IIIG
			CULG				2206		1				IIIB
			CULG				2324	2400					IS,W
			CULG				2355	2400					IIIS,W
15			CULG				0000	0111					IIIN,W
			CULG	0000	0051	1							IN
	0000	0728	CULG				0000	0157					IS,W
			CULG	0151	0446		0157	0659					IN,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS										SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15	0443	1443	WEIS				0445	1656	2					IN,DC
			CULG	0446	0715	1								IS
			CULG				0503	0655						IIIN,W
	1502	1810	WEIS				1206.4	1206.5	1					IIIB
	1259	2250	HARV	1310	1315	1								IIIG
			HARV	1340	1420	1								INW
			HARV				1344	2224	2					IIIN
			HARV				1345	2250	1					IN
			HARV	1531	1532	2								IIIG
			HARV				1617	1620	2					IIIGG
	2028	2400	CULG				2044	2400	1					IS
			CULG				2047	2250						IN,W
			CULG				2054.5	2330						IIIN,W
			HARV	2107		1								IIIB
			CULG	2244.5	2245	1	2244.5	2245	1					IIIG
			HARV				2245		2					IIIG
			CULG				2250	2400	1					IS
			CULG				2330	2400						IIIS,W
			CULG				2356.5	2357	1					IIIG
16			CULG				0000	0015						IIIS,W
	0000	0728	CULG	0000	0015		0000	0025						IS,W
			CULG	0015	0054		0025	0146						IN,W
			CULG				0015	0041						IIIN,W
			CULG	0349	0530									IN,W
			CULG	0538	0542	2								IIIN
			CULG	0540	0655	1								IN
	1124	1811	WEIS											
	1259	2240	HARV	1622	2208	1								INW
			HARV				1922	1925	2					IIIGG
			HARV				1928	2223	1					INW
			HARV	2015	2016	2								IIIG
	2028	2400	CULG	2044	2137	1								IS
			CULG	2114	2341	1								IIIN
			CULG	2137	2301.5	1								IN
			HARV	2217	2226	2								IIIGG
			CULG	2225	2225.5	1								DCIM
			CULG				2235.5							IIIB,W
			CULG				2244		1					IIIB
17	0000	0728	CULG				0005	0211						IN,W
			CULG	0021.5	0022	2								IIIG
			CULG	0026	0030									IIIN,W
			CULG	0027.5	0028	3								IIIG
			CULG				0125	0126	3					IIIG
			CULG	0400	0615									IN,W
			CULG	0441	0540									IIIN,W
	0606	1612	WEIS											
	1259	2300	HARV				1729		1					IIIB
			CULG	2030	0030.5	3								IIIG
	2028	2400	CULG				2105.5	2157						IIIN,W
			CULG	2111			2111							IIIB,W
			HARV	2111		2								IIIG
			LEAR				2319.6	2325.5	1					III
18	0000	0717	CULG	0506	0614									IN,W
	0509	0528	WEIS											
	0532	0621	WEIS											
	1259	2250	HARV				1728	1729	2	1728	1729	1		IIIG
			HARV	2103		1								IIIB
	2029	2400	CULG	2103		1								DCIM
19	0000	0728	CULG	0236	0346									IS,W
			CULG				0554	0650						IS,W
	1223	1816	WEIS											
	1259	2255	HARV	1931	2229	1								INW
	2030	2400	CULG											
20	0000	0728	CULG											
	1259	2300	HARV				1358		1					IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
20			HARV	1421	1422	2							IIIG
	0519	1714	WEIS				1458.2	1458.4	2				IIIB
			HARV				2031		2				IIIG,U
	2028	2400	CULG				2158.5	2315.5					IIIN,W
			HARV				2223	2225	1				IIIG
			CULG				2223.5	2225					IIIG,W
			CULG				2253.5		1				IIIB,U
			HARV				2256	2300	2				IIIGG,V
			CULG				2256	2257.5	3	2257	2257.8	1	IIIG,U
			SGMR				2256.3	2256.7	1				V
			PALE				2256.4	2300.1	1				G
			CULG				2259.5	2300	2				IIIG
21	0000	0728	CULG										
	1259	2300	HARV	1424	1425	1							IIIGW
			HARV	1432	1435	1							IIIGW
	1514	1819	WEIS										
	2028	2400	CULG										
22	0000	0539	CULG				0055.5						IIIB,W
	0417	1115	WEIS				0853.7	0854.3	2				IIIG
			LEAR				0853.8	0854.3	1				III
	1122	1819	WEIS										
			HARV	2041	2042	1							IIIG
	2156	2400	CULG										
23	0000	0729	CULG				0059.5	0100	1				IIIG
	0417	1728	WEIS										
			CULG	0533	0533.5	1	0533	0533.5	2				IIIG
			CULG				0534.5	0535	1				IIIG
	1240	2255	HARV				1957	1958	1	1957	1958	1	IIIGW
	2029	2400	CULG	2236	2243.5		2236	2243.5					IIIN,W
			CULG	2242	2243	1							DCIM
24	0000	0729	CULG				0335	0336					IIIG,W
			CULG				0335.5		1				IIIB
	0535	1822	WEIS										
	1418	2245	HARV	1545	1547	1							I
	2029	2400	CULG				2322		2				IIIB
			CULG				2322	2322.5					IIIG,W
25	0000	0729	CULG				0436	0436.5	1				IIIG
	0415	1129	WEIS				0742.3	0742.4	1				IIIB
	1135	1454	WEIS										
	1231	2315	HARV				1647		1	1647		1	IIIB
	1640	1824	WEIS				1647.0	1647.3	1				IIIG
			HARV				1809	1814	1	1809	1814	1	IIIGW
			HARV				1846	1858	2	1846	1858	2	IIIGG
			PALE				1846.5	1855.5	2				G
			SGMR				1852.4	1852.6	1				III
			HARV				1853	1858	2				II
	2051	2400	CULG				2105	2348.5					IIIN,W
			HARV							2106		1	IIIB
			CULG				2127.5	2251	1				IIIN
			HARV				2146	2147	1				IIIGW
			HARV				2159	2200	2	2159	2200	1	IIIG
			CULG				2159.5	2200	3				IIIB,U
			PALE				2159.6	2200.1	2				III
			SGMR				2159.6	2200.0	1				III
			HARV				2217	2218	1				IIIB
			CULG	2217.5	2226	1							IIIN
			HARV	2221	2222	1	2220	2222	2				IIIGG
			PALE				2221.1	2225.2	2				G
			CULG				2224.5	2225	2				IIIB
			HARV	2225	2226	1	2224	2226	2	2225		1	IIIGG
26	0000	0729	CULG				0013	0014	1				IIIG
			CULG				0031.5	0125					IIIN,W
			CULG	0056.5	0058.5	1	0056	0058.5	1				IIIG
			CULG				0109.5	0110	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
26			PALE				0109.8	0110.0	1				III
			CULG				0358.5	0400					IIIG,W
			CULG				0450.5	0620					IIIS,W
			CULG				0453	0535	1				IN
			CULG				0459	0601	1				IIIN
			CULG				0507.5	0523	2				IIIN
	0413	1822	WEIS				0507.5	0522.9	1				IIIN
			LEAR				0507.7	0507.9	1				III
			LEAR				0515.5	0523.2	1				III
			LEAR				0546.8	0547.1	1				III
			CULG	0701.5	0702.5	1							IIIG
			CULG				0701.5	0702.5					IIIG,W
			WEIS				0702.2	0702.6	2				DC
			WEIS				0837.8	0839.4	1				IIIG
			WEIS				1108.0	1109.2	2				IIIG
			WEIS				1229.7	1230.0	2				IIIG
			WEIS				1233.5	1233.7	2				DCIM
	1230	2300	HARV				1253	1254	2				
			WEIS				1254.0	1254.4	2				IIIG
			HARV				1305	2239	2	1829		1	IIIN
			HARV				1325		2				IIIG
			WEIS				1325.3	1325.8	2				IIIG
			WEIS				1442.8	1443.0	2				IIIG
			WEIS				1514.7	1515.0	2				IIIG
			HARV				1515		2				IIIG
			PALE				1850.8	1851.7	1				III
			HARV				1851	1852	2	1851	1852	2	IIIG
			HARV				1900		2				IIIG
			HARV				1937	1938	2	1937	1938	1	IIIG
			PALE				1937.2	1937.6	1				III
			HARV	2019	2023	2	2019		2				IIIG
	2029	2400	CULG	2059		1	2059		1				IIIB
			HARV	2106	2107	2							IIIG
			CULG	2106.5	2253.5	1							IN
			CULG				2107	2320					IIIN,W
			HARV	2117	2119	2							IIIG
			CULG	2132	2139.5	1	2132	2140	2				IIIG,N
			PALE				2135.5	2138.6	2				G
			HARV	2138	2140	1	3132	2140	3	2138		2	IIIGG
			CULG				2138		3				IIIB,U
			CULG	2141	2239.5	1	2141	2315	1				IIIN
			SGMR				2145.0	2145.1	1				III
27	0000	0718	CULG				0125.5	0126					IIIG,W
	0413	0459	WEIS										
			CULG				0501.5		1				IIIB
			CULG				0554.5	0556					IIIG,W
			CULG	0643.5	0650.5	1							IS
	0523	1826	WEIS				1027	1504	2				IS
	1421	2300	HARV				1431	1505	1				IN
			HARV	1455	2027	1							INW
	2029	2400	CULG	2055	2400	1							IS
			CULG				2107	2108					IIIG,W
			HARV	2214		1							IIIG
28	0000	0729	CULG	0000	0929								IN,W
			CULG							0115	0125		SWF,W
	0410	0721	WEIS										
			CULG				0544	0702					IS,W
	0730	1035	WEIS										
	1629	1828	WEIS										
	1236	2250	HARV				1652	1703	2				I
			HARV				1739	1740	1				I
			HARV	2037	2040	2	2039	2041	2				IIIGG
	2028	2400	CULG	2137	2240								IS,W
			HARV				2210	2250	1				IN
			CULG				2227		1				IIIB
			CULG				2229.5		1				IIIB
			CULG	2240	2400								IN,W
29	0000	0729	CULG	0000	0705								IN,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

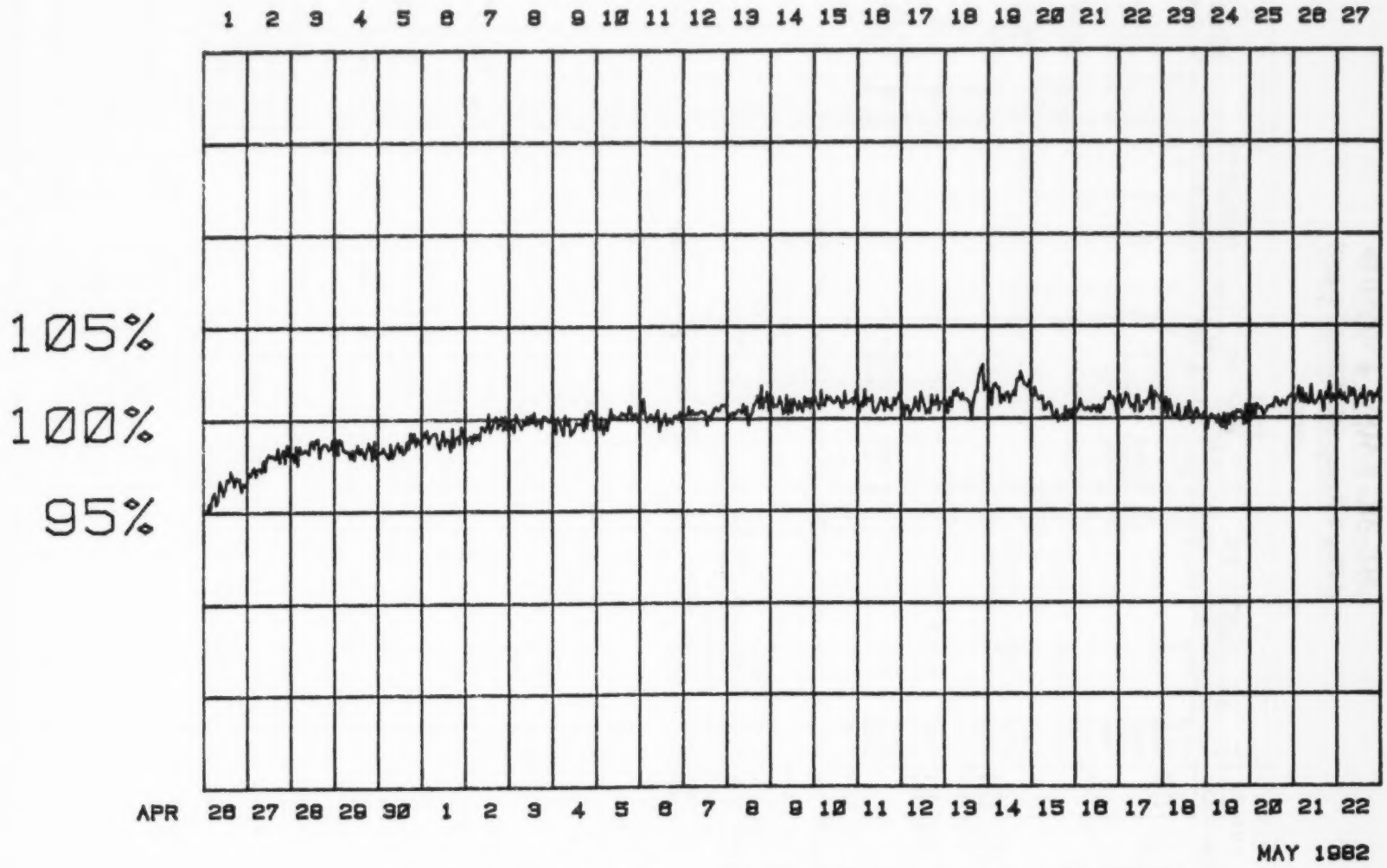
MAY 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
29			CULG	0314	0342.5		0314	0342.5					IIIN,W
	0410	1828	WEIS										
	1220	2320	HARV	1309	2234	1							INW
			HARV				1323		2				IIIB,U
			HARV				1648	1649	1				IIIBW
			HARV				1742		1				IIIBW
	2030	2400	CULG										
			HARV				2110	2113	1				IIIGW
			HARV	2216	2217	2							IIIG
30			CULG							0339	0347		SWF,W
			CULG	0429	0448.5								IN,W
	1221	2250	HARV	1832	2238	1							INW
	2030	2254	CULG										
	2321	2400	CULG										
31	0000	0729	CULG	0012.5	0013	2							DCIM
	0030	2400	CULG										
			CULG	0034	0125	1							IN
			CULG	0309	0311	3	0309.5	0310.5	1				IIIGG,U
			CULG				0623	0643					IN,W
	1221	2310	HARV	1223	1307	1							I

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

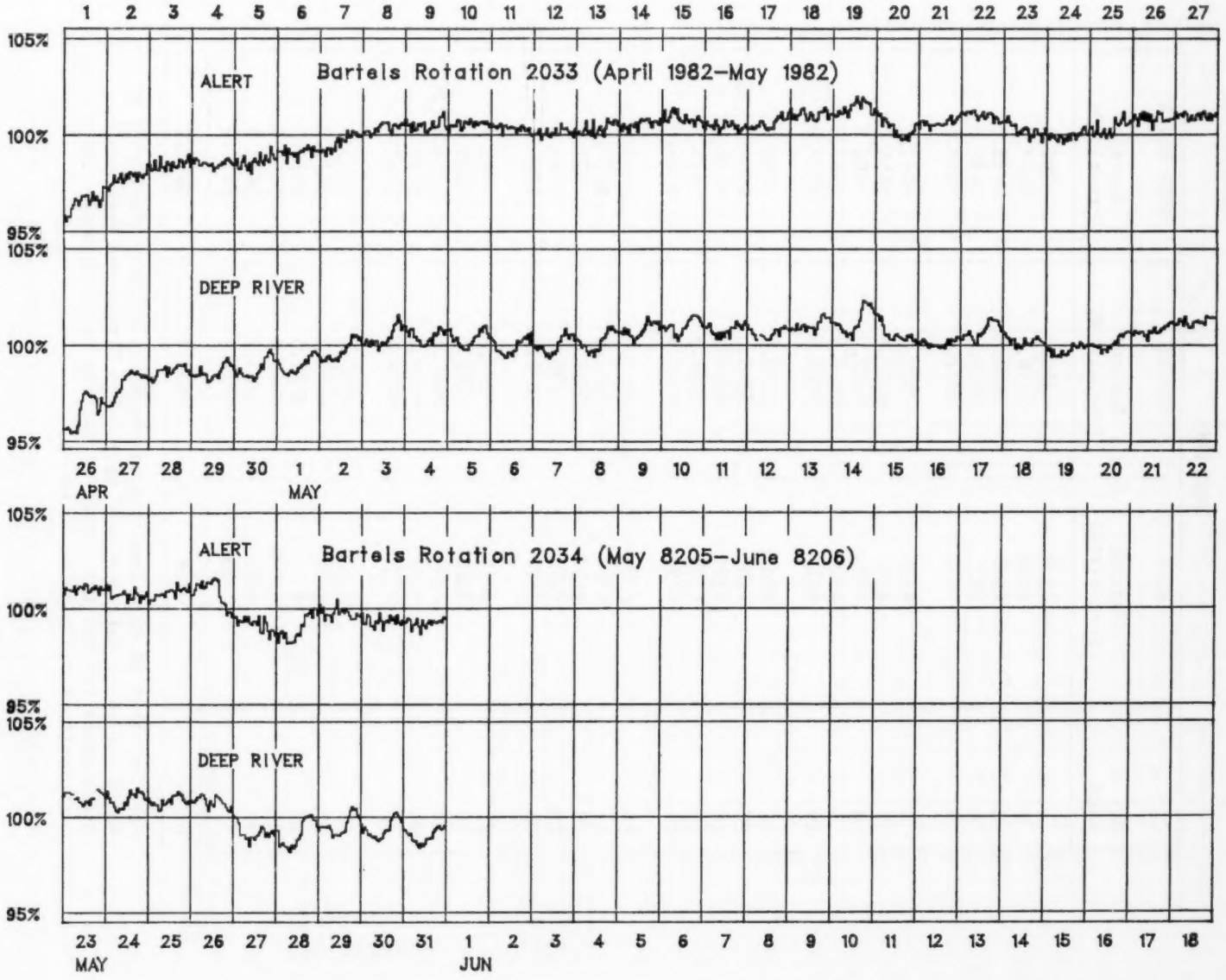
THULE NEUTRON MONITOR



BARTELS ROTATION 2033

COSMIC RAY INDICES
(Neutron Monitor)

COSMIC RAY INDICES
(Neutron Monitor)



COSMIC RAY INDICES

(Neutron Monitors)

MAY 1982

May 1982	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	4127	6740.9	6391.5
2	4148	6774.3	6437.7
3	4165	6823.9	6483.0
4	4161	6834.3	6487.3
5	4172	6837.9	6479.4
6	4173	6822.3	6453.3
7	4185	6808.9	6456.7
8	4193	6822.3	6468.3
9	4202	6837.9	6507.5
10	4211	6856.9	6521.8
11	4205	6830.5	6508.6
12	4200	6840.0	6498.2 (22)
13	4224	6871.2	6524.9
14	4235	6894.3	6538.6
15	4193	6822.8	6495.9
16	4199	6842.8	6463.0
17	4210	6866.8	6504.8
18	4182	6817.1	6470.0
19	4171	6795.2	6440.5
20	4198	6825.3	6465.1
21	4215	6857.8	6505.9
22	4219	6866.6	6535.6
23	4230	6897.8	6545.3 (20)
24	4222	6879.0	6538.1
25	4224	6884.2	6533.4
26	4233	6885.9	6530.6
27	4173	6773.1	6426.7
28	4171	6758.3	6422.3
29	4197	6811.5	6450.9
30	4192	6783.7	6438.0
31	4188	6777.2	6414.2
MEAN	4194	6830.4	6481.9

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

GEOMAGNETIC ACTIVITY INDICES

MAY 1982

Day	Three-Hourly Indices Kp									Ap	Cp	Three-Hourly Indices Km								Am	aa			
		1	2	3	4	5	6	7	8	Sum			1	2	3	4	5	6	7	8		N	S	M
1		4+	3+	4	3+	3+	5-	3	2	28	22	1.1	4	3-	4-	4-	3	4	3-	2	37	34	30	34 30
2		4+	4+	3	4-	4+	4	5+	4	33	30	1.3	4	4	3-	3+	4	3	5-	4-	45	45	48	38 56
3	D3	4+	5	5	4+	6-	5+	5-	5-	39	45	1.5	4	4+	5-	4	5	5-	4+	4	66	71	51	53 69
4		3+	3-	3-	5	4	4-	2-	2-	25-	19	1.0	3	2	2	4	3+	3+	2	2-	27	29	31	33 27
5		2+	3+	3+	3	3	3	3	1	22	14	0.8	2+	3+	3+	3	3	3-	3	1	27	20	28	23 25
6	Q9	2+	2	2-	2-	1+	2	1+	2-	14	6	0.3	2+	2	2+	1+	1+	2-	1+	1+	13	15	12	13 13 C
7	Q4	2-	1+	0+	1+	2-	0+	1-	1	8+	4	0.1	1+	1+	0+	1+	2-	0+	1-	1+	7	10	7	9 8 CC
8	Q5	2+	1+	1+	1	1-	1	1-	2-	10	5	0.2	2+	1+	1+	1	1	1+	1-	1+	9	11	6	10 8 CC
9	Q0A	3-	3	2	1+	2	1	2-	1+	15	8	0.4	3-	3-	3-	2-	2-	1+	1+	1+	15	17	9	15 10 CC
10	Q6	2	2-	1	0+	2-	1	1+	2-	11-	5	0.2	2	1+	1-	1-	2-	1	1	1+	8	12	7	8 11 CC
11		3	2+	2-	2-	2+	2+	3-	2+	18+	9	0.5	3-	2-	2-	2-	2-	2-	2+	2	14	18	10	12 16 C
12	Q7	2-	2	2	2+	1	2	2-	1-	13+	6	0.3	1+	2-	2	2+	1-	2-	1+	1	11	15	9	12 12 CC
13	Q8	2-	2-	2-	1-	1	2+	2+	2	13+	6	0.3	2-	1+	1+	1-	1-	2-	2+	2-	10	17	8	9 15 CC
14		2-	2	1	3-	3	2+	1	2-	15+	8	0.4	1+	2-	1+	2+	2+	2-	1	1+	11	20	9	12 16
15		4-	3	3-	3	4-	5-	4	2-	26+	20	1.0	3+	3-	3-	3	3+	3+	4-	2	30	41	26	25 43
16		2	2	3	3	2	2+	2+	2+	19	10	0.5	2+	2+	3	3	2	2+	2+	2+	21	20	18	19 19
17		2	3	2-	2+	3+	3+	3-	2+	21-	12	0.7	2-	3	1+	3-	3	3	2+	2+	21	23	22	18 27
18		3+	3	3-	5+	3+	2+	3-	4-	26+	20	1.0	3+	3+	2+	5-	3+	3-	3-	3+	35	36	38	41 33
19		3+	3	3-	2+	2+	2+	2	3	21	12	0.7	3	3-	2+	2+	3-	3-	2+	3-	23	26	19	20 24
20		2+	2+	2+	30	-	2+	1+	2-	17	8	0.4	2	2	2+	3-	2-	2	1+	2-	15	22	13	17 17
21		1	2-	3	2+	3	2-	1+	2	16	8	0.5	1	2-	3	2+	3-	2-	1-	2	16	18	16	16 18
22	Q2	1	1+	1	1+	1-	1-	0+	1	7+	4	0.1	1+	1+	1+	1+	1-	1-	0+	1-	6	8	7	9 6 CK
23	Q1	2-	1-	0+	0	0+	1-	1-	0	4+	2	0.0	2	1	0	0	0+	0+	0+	0	4	7	3	5 5 CC
24	Q3	1-	1	1+	1-	2-	1+	1	1-	8+	4	0.1	1	1-	1+	1-	2-	1+	1	1	7	7	7	5 9 CC
25		1	2-	1	1+	2	3-	2+	3+	15+	8	0.4	1	2-	1+	1+	2-	2	2	3-	13	18	10	9 19
26		3-	3-	2	2+	4	5	5	4+	28	24	1.2	3-	2+	2	3-	3	4+	4	4	37	43	26	19 49
27	D2	3+	5-	5+	5-	6+	6	5	5+	41-	54	1.6	4-	4+	5	4	5+	5-	5-	5-	76	74	70	53 91
28	D1	5-	5+	5	5	6	5+	5-	6	42	56	1.6	4+	5-	5	5-	5-	4	4-	5	74	71	57	55 73
29	D5	4+	4+	5	4+	4+	4-	5	4+	35+	35	1.4	4	4+	4	4	4-	3	4	4	52	52	61	59 53
30	D4	4	4-	4+	5-	4+	4+	4	6-	35	35	1.4	4	4-	4	4	4	4-	4-	5	55	54	51	50 55
31		4+	4	5-	4+	4-	5-	4+	4	34	31	1.3	4+	4+	4+	4-	3	4-	4-	3+	50	57	37	50 44
									MEAN	17	0.72										26.9	29.4	24.1	26.7

Day	Three-Hourly Indices Kn								An	Three-Hourly Indices Ks								As
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	
1	4	3-	4-	3+	3	4+	3-	2	36	4	3-	4-	4	3	4	3	2	38
2	4-	4-	3-	4-	4-	3	4+	4-	43	4+	4	2+	3	4	3	5-	3+	47
3	4	5	5-	4	5	5-	5-	4+	72	4	4	5-	4	5-	5-	4-	4-	61
4	3+	2	2	4-	4-	3+	2	2	28	3	2	2-	4	3	3	2	1	25
5	2+	3+	3+	3	3	3-	3	1+	26	2+	3	3+	3	3	3	3+	1-	27
6	2	2-	2-	2-	2-	2	2-	2-	13	2+	2+	3-	1	1+	2-	1+	1	12
7	1+	1+	1-	1+	2-	1-	1	1+	8	1+	1+	0	1	1+	0+	0+	1+	6
8	2	1	1+	1	1+	1+	1	2-	10	2+	2-	1	1	1-	1	0	1-	8
9	3-	3-	3	2	2+	2-	2-	2-	18	3	3-	2+	1+	1+	1-	1	1-	13
10	2	1+	1-	1-	2	1+	1+	2	10	2-	1+	1-	0+	1+	0+	0	1-	6
11	3-	2-	1+	2-	2+	2+	2+	2+	17	2+	2	2-	2	1+	1-	2	1+	12
12	2-	2	2+	2+	1+	2	2-	1+	14	1	1+	2-	2+	0	1	1	0+	8
13	10	2-	1+	2-	1+	1+	2	3-	13	2-	1+	1	0+	0	1	2	1	7
14	2-	2	1+	3-	3-	2+	1+	2-	15	1	1+	1	2-	2-	1	0+	1-	7
15	4-	3-	3-	3	4-	4-	4-	2	33	3	6-	3-	3	3	3	3+	2	27
16	2+	2+	3+	3	2+	3	3-	3-	25	2+	2+	3	6-	2-	2-	2	2-	17
17	2	3	1+	3-	3+	3	3-	2+	23	2-	3+	1	3-	3	3	2	2+	20
18	3+	3	2+	5	3+	3-	3-	3+	38	3+	3+	2+	4	3	2+	2+	3+	32
19	3	3	2+	2+	3	3	2+	3-	25	3	2+	2+	2+	2+	3-	2+	3-	21
20	2	2	2	3-	2	2+	2	2-	17	2	2	3-	2+	1	2-	1-	1+	13
21	1+	2-	3+	3-	3	2	1	2	19	1-	1+	3-	2	3-	1+	1-	2	13
22	1	1+	1+	2-	1	1	1-	1	8	1+	1	1+	1	0+	0	0	1-	5
23	2-	1	0+	0	1-	1-	1-	0	5	2	1	0	0	0	0	0	0	3
24	1+	1	1+	1	2	2-	1+	1+	9	1-	1-	2-	0+	1+	1-	0+	1-	6
25	1+	2	2	1+	2+	3-	2+	3	17	0+	1	1	1	1	1	1+	2+	8
26	3-	2+	2+	3	4-	5	4+	4	44	2+	2+	2-	2	2	3+	4	4	29
27	4-	4	5+	4-	5+	5	5-	4+	77	4-	4+	5	4+	5	4+	5-	5-	74
28	4	5	5+	4+	5	4	4-	5	78	4+	5-	5	5-	4+	4	4-	5-	70
29	4	4	4	4+	4-	3	4+	4	53	4	5-	4+	4-	4-	3	4	4	52
30	4-	3+	4	4	4	4-	3+	5-	51	4+	4	4-	4-	4+	4-	4-	5	59
31	4	4	4+	4-	3+	4-	3+	3+	48	5-	4+	4+	4-	3	3+	4	3	51
								MEAN	28.8									25.1

ERRATA:

Conversion in 1979 to a new computer with a different word size caused values of indices aa to be truncated if they exceeded 99; the machine read and printed only the two least significant digits. Correct values of the affected indices are listed below. Both half-daily values are given, too, to make clear which of the two entries should be corrected.

Date	N	S	M
21 Feb 1979			66 102
10 Mar			54 101
25 Apr	109		27 148
26 Apr			103 15
13 Aug			53 108
20 Aug			33 100
29 Aug			59 111
18 Sep			100 63
25 Jul 1980			13 100
19 Dec	118	123	63 178
06 Feb 1981			24 116

NOTE:

aa indices are provisional from 1 January 1981 until further notice, in connection with the change of the Southern Hemisphere observatory.

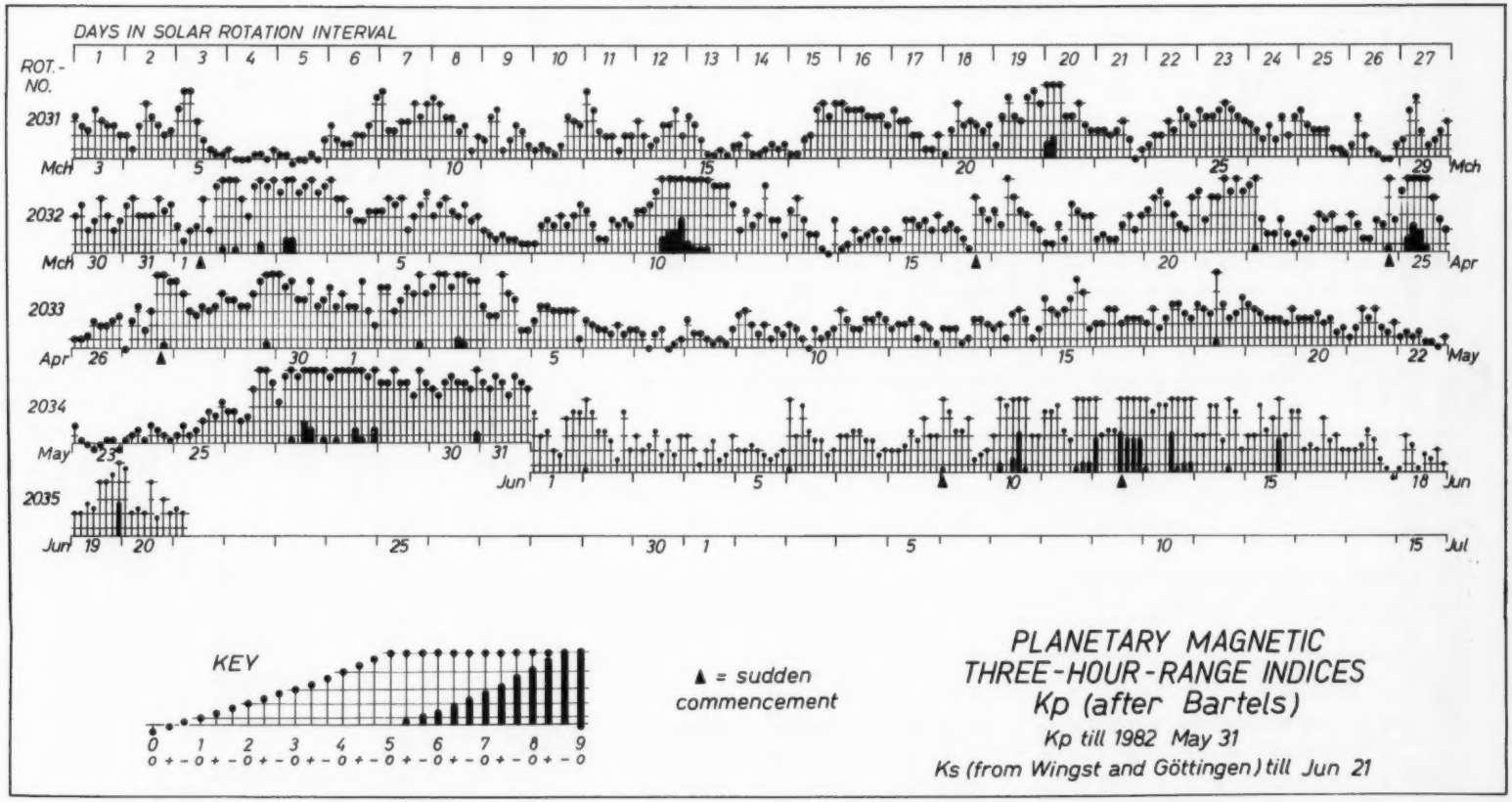
Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alonc are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2 nT) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6", K = "Ap≤6 but one Kp≥30 or two Kp values≥3-"). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic three-hourly indices Km, Kn, Ks, daily mean values Am, An, As (unit 1nT), and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices daily north (N) and south (S) values, and half-daily antipodal mean (M) values are given. Quiet 24-hour and 48-hour intervals centered on 1200 UT are indicated for really quiet as C and for quiet but with some slightly disturbed three-hour intervals as K. The first hundred years series of aa is in IAGA Bulletin No.33, and complementary data are in IAGA Bulletin No.39.

DAILY AVERAGE INDICES Ap

	1981							1982				
DAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
1	7	17	18	5	9	7	6	9	41	68	20	22
2	7	22	15	18	22	5	9	9	60	107	42	30
3	16	9	18	9	36	8	8	20	35	13	48	45
4	5	9	11	11	17	6	10	12	49	12	22	19
5	6	12	15	17	7	11	9	4	37	16	21	14
6	14	19	14	8	6	9	4	10	39	3	18	6
7	50	14	10	5	32	19	3	12	26	3	5	4
8	16	8	4	10	25	27	15	9	18	11	12	5
9	4	6	7	11	21	4	10	4	15	20	10	8
10	4	4	16	9	27	13	9	4	35	16	61	5
11	6	13	15	21	46	31	6	5	45	10	47	9
12	4	20	9	10	12	39	23	2	41	8	15	6
13	5	9	9	12	17	5	12	4	54	13	11	6
14	4	7	8	10	73	27	6	3	42	11	6	8
15	11	4	13	10	20	20	6	12	18	7	10	20
16	21	8	8	7	8	17	4	17	6	4	11	10
17	10	29	25	4	18	32	7	10	30	14	19	12
18	10	10	23	18	6	26	14	13	34	20	12	20
19	10	9	10	38	23	14	10	3	36	10	8	12
20	10	12	8	9	67	13	6	6	26	12	20	8
21	7	6	14	7	33	15	6	14	21	23	32	8
22	5	24	13	13	72	11	3	27	51	38	18	4
23	5	37	56	4	27	20	6	22	29	8	9	2
24	13	13	28	7	18	9	10	21	24	12	15	4
25	15	134	16	13	18	27	8	9	42	20	52	8
26	14	78	8	32	10	9	6	7	43	11	7	24
27	10	24	25	21	10	4	6	13	12	9	24	54
28	9	8	18	6	19	6	12	17	10	6	21	56
29	33	5	18	14	12	4	32	11		13	31	35
30	14	9	17	15	12	1	30	27		15	30	35
31		12	15		4		18	34		20		31
MEAN	12	19	15	12	23	15	10	12	33	18	22	17

GEOMAGNETIC ACTIVITY INDICES



PRINCIPAL MAGNETIC STORMS

MAY 1982

OBS. 3 letter code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	COMMENCEMENT hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY (3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	UT END HOUR
SIT	60.0N	01	00--	..	..	..	..	03(3)	7	60	570	640	04	02
IRK	41.0N	02	01--	..	..	..	..	03(2,3,4,5,8)	5	19	120	54	04	17
JAI	17.3N	02	0500	..	..	..	..		-	9	120	44	04	01
SHL	14.7N	02	0500	..	..	..	..		-	9	143	44	04	01
UJJ	13.5N	02	0500	..	..	..	..		-	8	122	39	04	01
ABG	09.5N	02	0500	..	..	..	..	03(4,5)	5	7	128	48	04	01
HYB	07.6N	02	0100	..	..	..	..	03(4,5)	5	7	144	34	04	17
GUA	04.0N	02	2218	..	..	..	..	03(5)	5	10	120	20	04	06
ANN	01.5N	02	0500	..	..	..	..		-	6	159	78	04	01
PMG	18.6S	02	....	..	..	..	..	03(5)	5	5	120	50	04	17
HUA	00.6S	03	0458	..	..	..	..	03(6)	6	7	265	44	04	01
HUA	00.6S	15	0042	..	..	..	..	05(5,6,7)	5	5	187	42	15	23
HYB	07.6N	17	1200	..	..	..	..	18(4)	6	6	117	23	19	03
PMG	18.6S	18	....	..	..	..	..	18(4)	5	3	110	50	19	18
HER	33.7S	18	09--	..	..	..	..	18(4)	5	15	80	38	18	12
GNA	43.2S	18	10..	..	..	..	..	18(4)	5	7	80	70	20	12
HYB	07.6N	25	0200	..	..	..	..	26(6) 27(5,8) 30(3)	5	9	197	48	31	19
FRD	49.6N	26	11--	..	..	..	..	26(6,7,8) 27(3,5,7) 28(2,3,5,7,8) 29(3,4,7,8) 30(8) 31(1,2,3,7) 01(8) 02(1)	5	28	218	95	02	--
COL	60.6N	26	00--	..	..	..	..	28(4) 29(3) 31(3)	7	282	1650	1110	02	16
SIT	60.0N	26	16--	..	..	..	..	27(3)	7	--	--	--	01	11
NEW	55.1N	26	08..	..	..	..	..	27(3) 28(2,3)	6	49	196	241	03	08
IRK	41.0N	26	07--	..	..	..	..	26(6) 27(5,6)	6	29	238	61	31	18
SJG	29.9N	26	1100	..	..	..	..	26(5)	5	12	177	32	29	10
JAI	17.3N	26	0700	..	..	..	..		-	12	93	44	27	03
SHL	14.7N	26	0700	..	..	..	..		-	8	105	34	27	03
UJJ	13.5N	26	0700	..	..	..	..		-	10	97	44	27	03
ABG	09.5N	26	0700	..	..	..	..	26(6)	6	10	106	46	27	03
ANN	01.5N	26	0700	..	..	..	..		-	7	129	36	27	03
HUA	00.6S	26	0956	..	..	..	..	26(6)	7	8	264	28	27	01
PMG	18.6S	26	....	..	..	..	..	26(6) 27(2,3) 30(3)	5	5	140	50	31	16
HER	33.7S	26	11--	..	..	..	..	28(8)	5	37	134	101	30	05
GNA	43.2S	26	15..	..	..	..	..	27(5)	6	25	120	100	31	18
KGL	56.5S	26	17--	..	..	..	..	27(5,6,8) 28(2) 30(8)	6	53	383	262	01	08
JAI	17.3N	27	0500	..	..	..	..		-	9	93	52	30	01
SHL	14.7N	27	0500	..	..	..	..		-	-	-	-	30	01
UJJ	13.5N	27	0500	..	..	..	..		-	8	104	53	30	01
ABG	09.5N	27	0500	..	..	..	..	27(5,8)	5	7	121	71	30	01
GUA	04.0N	27	0459	..	..	..	..	27(3)	5	10	120	30	28	18
ANN	01.5N	27	0500	..	..	..	..		-	7	232	91	30	01
HUA	00.6S	27	0806	..	..	..	..	28(5)	6	10	216	39	31	24
HUA	00.6S	27	0806	..	..	..	..	27(5,6,7)	5	9	278	53	31	24
GUA	04.0N	28	1805	..	..	..	..	28(8)	5	10	70	30	29	14
GUA	04.0N	29	2115	..	..	..	..	29(8)	5	10	80	40	31	18
HER	33.7S	30	21--	..	..	..	..	30(8)	5	16	75	57	01	03

REPORTS WERE RECEIVED FROM THE FOLLOWING OBSERVATORIES:

ALIBAG ANNAMALAINAGAR COLLEGE FREDERICKSBURG GNANGARA GUAM HERMANUS HUANCAYO HYDERABAD
IRKUTSK JAIPUR KERGUELEN NEWPORT PORT MORESBY SAN JUAN SHILLONG SITKA UJJAIN

Errata: Principal Magnetic Storms

Conversion in 1979 to a new computer with different word size caused values of the Z (gamma) vertical range to be truncated if they exceeded 99; the machine read and printed only the two least significant digits. Correct values of the affected data are listed below.

Date	Sta	Lat	Time	Z Range
Feb. 6, 1980	COL	64.6N	0320UT	1090
Apr. 9, 1980	COL	64.6N	05--UT	1150
Oct. 22, 1980	COL	64.6N	03--UT	1020
Feb. 5, 1981	COL	64.6N	04--UT	1010
Mar. 4, 1981	COL	64.6N	2033UT	1330
Apr. 11, 1981	NEW	55.1N	1339UT	1134
Apr. 26, 1981	COL	64.6N	02--UT	1090
May 9, 1981	COL	64.6N	00--UT	1150
May 14, 1981	COL	64.6N	09--UT	1070
Jun. 29, 1981	COL	64.6N	05--UT	1230
Jul. 24, 1981	COL	64.6N	21--UT	1720
Jul. 25, 1981	NEW	55.1N	0515UT	1134
Oct. 19, 1981	COL	64.6N	04--UT	1160
Oct. 22, 1981	COL	64.6N	05--UT	1520
Feb. 10, 1982	COL	64.6N	09--UT	1110
Feb. 21, 1982	COL	64.6N	17--UT	1190

Errata to SGD, 452 Part I, page 155, April 1982 issue:

Feb. 6, 1982 KGL 56.5S 1751 UT H (gamma) horizontal amplitude should be 180, not 18.0.

Feb. 10, 1982 SIT 60.6N 1106 UT H (gamma) horizontal amplitude should be -373, not- 37.3.
Z (gamma) vertical amplitude should be -237, not -23.7.

RADIO PROPAGATION QUALITY INDICES

MAY 1982

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	3.4	3.7	6.4	5.3	4.8
2	3.5	4.1	6.1	4.3	2.8
3	1.8	2.2	5.8	2.8	1.8
4	3.7	4.5	6.1	4.7	5.5
5	4.0	4.3	3.5	5.0	1.9
6	5.4	5.6	6.5	5.4	3.7
7	7.0	8.1	7.9	5.7	4.9
8	6.2	6.6	7.0	6.3	6.0
9	6.5	6.8	6.0	6.6	7.6
10	6.1	7.8	7.1	5.7	5.9
11	6.1	5.9	8.0	5.7	7.2
12	5.9	6.9	6.6	5.7	6.6
13	6.2	7.3	6.6	5.4	5.6
14	6.6	7.2	5.9	5.8	4.7
15	5.4	6.5	6.5	6.1	7.3
16	4.3	5.6	6.1	7.1	5.5
17	5.4	6.0	5.8	6.7	5.1
18	5.2	4.2	3.5	4.3	4.8
19	5.2	4.9	5.5	5.3	5.2
20	5.5	4.6	5.8	6.3	4.5
21	6.2	5.4	5.8	6.0	5.3
22	6.5	6.1	6.4	6.3	5.6
23	6.5	8.3	6.1	6.3	6.3
24	6.2	6.5	5.7	8.4	7.8
25	7.5	7.4	6.4	9.9	9.9
26	4.1	6.0	5.3	5.5	6.5
27	0.0	1.3	2.3	3.1	3.4
28	3.1	0.7	1.1	2.5	3.1
29	2.0	2.4	1.9	2.6	2.2
30	2.5	2.0	2.3	4.8	5.8
31	0.8	1.7	2.0	2.3	3.4
MEAN	4.8	5.2	5.4	5.4	5.2

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

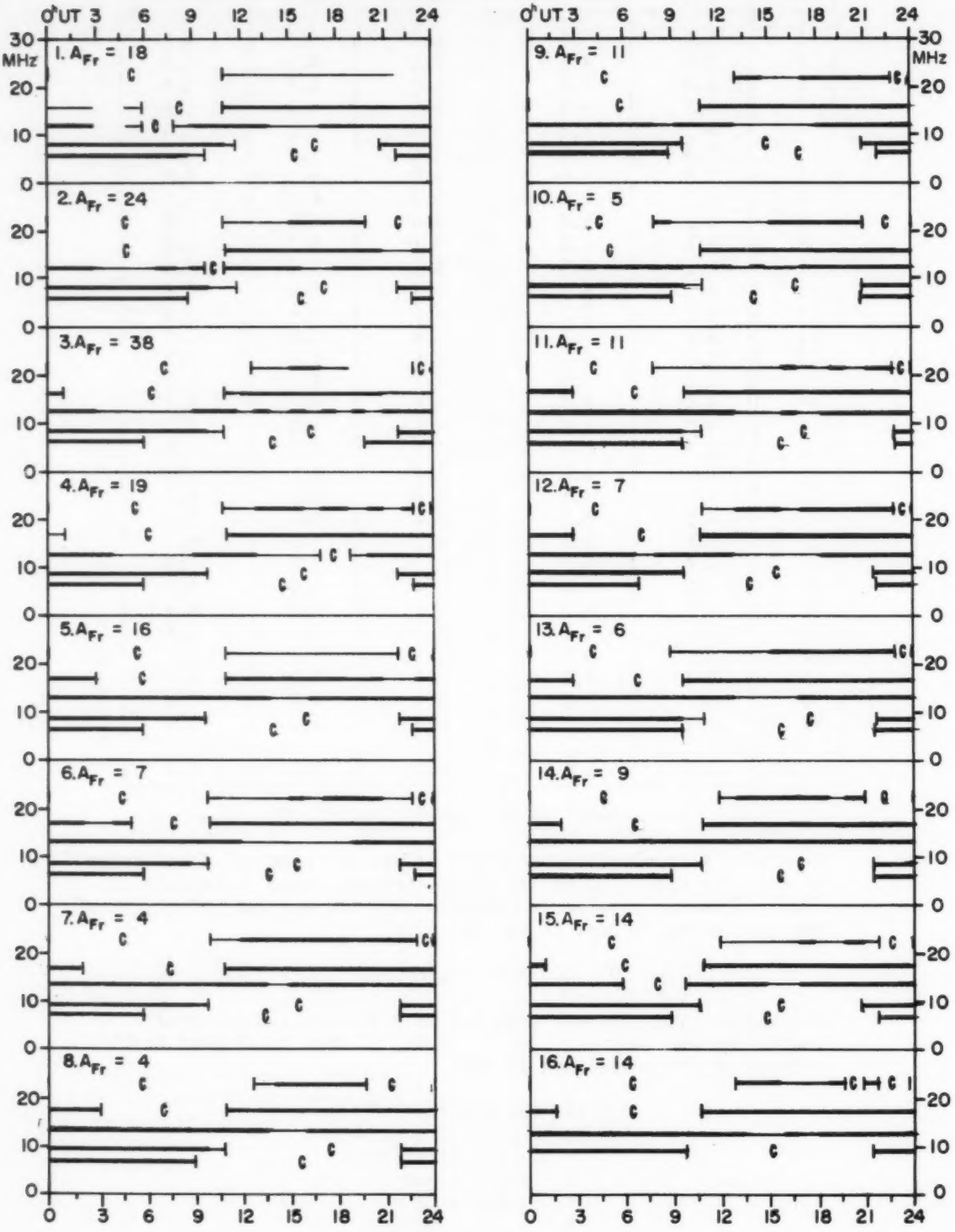
The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

Scale for Quality Indices

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

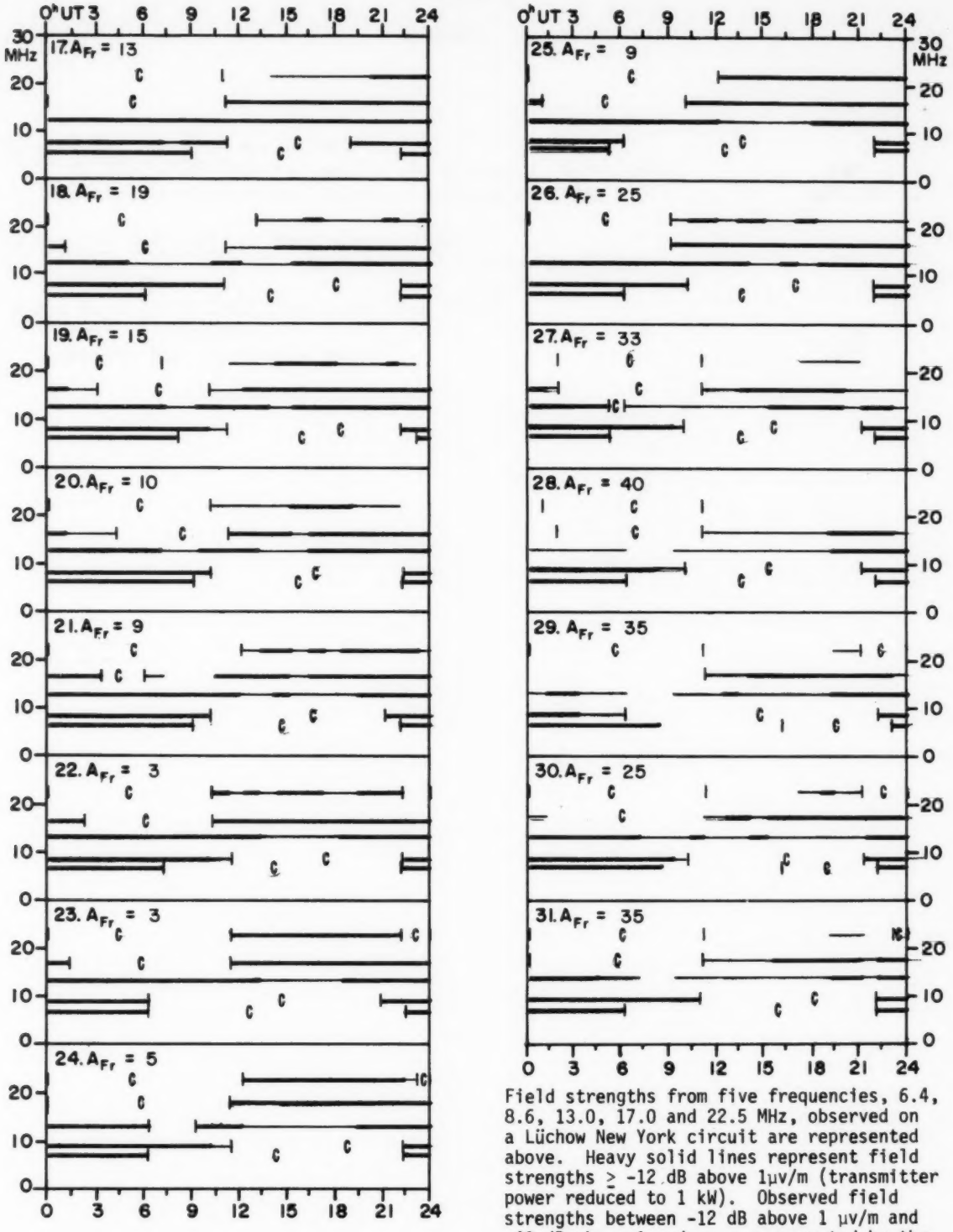
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1982



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MAY 1982



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line.

SGD 455 Part I (Prompt)

LATE DATA

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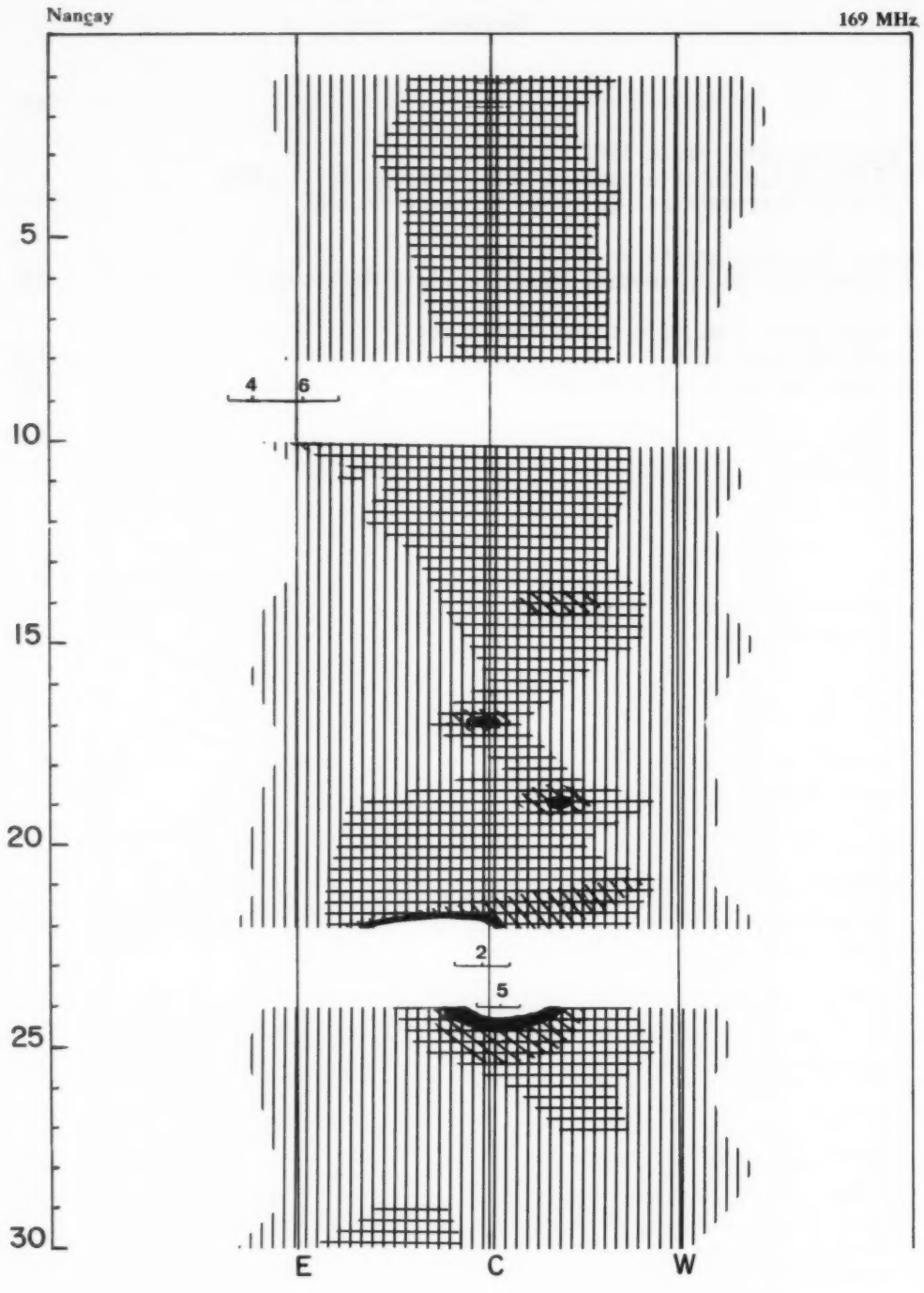
SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

APRIL 1982



SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
01	0000	0745	CULG				0000	0745	1				IS,C,DC
			CULG				0000	0745					IIIS,W
			CULG	0007	0008	2							IIIG
			CULG				0038.5		1	0038.5		1	IIIB
			CULG				0052	0053	2	0052	0053	1	
			CULG				0107	0515.5	1				IIIN
			CULG	0301	0745	1							IN
			CULG	0446	0447								IIIN,W
			CULG	0545	0627	1							IS,DC
			CULG				0704	0706	2				IIIG
	2045	2400	CULG	2045	2400	1	2045	2400	1				IS,C
			CULG							2049	2255	1	IIIN
			CULG				2132.5		1	2132.5		1	IIIB
02	0000	0744	CULG				0000	0744	1				IS,C
			CULG				0000	0015					SCINT
			CULG	0000	0744								IS,W,C
			CULG				0109.5	0744	1				IIIN
			CULG	0129	0129.5	1							DCIM
			CULG				0546	0548	2	0546	0548	1	IIIG
	2045	2400	CULG				2045	2400					IIIN,W
			CULG	2055.5	2057	1	2055	2057.5	2				IIIG
			CULG	2057	2400	1							IN,DC
			CULG				2113	2354	1				IIIN
03	0000	0744	CULG				0000	0744					IIIN,W
			CULG	0023	0744	1							IN
			CULG	0219.5	0221.5	2							DC
			CULG				0322.5		1				IIIB,U
			CULG	0625.5	0626	2	0625.5		1				IIIG,U
	2044	2400	CULG	2044	2400								IN,W
			CULG				2222	2400					IIIN,W
			CULG				2342.5	2344	3	2343	2344	2	IIIG,V
04	0000	0744	CULG	0000	0650								IN,W
			CULG	0054	0058	1							IS
			CULG	0055.5	0059.5	2	0054	0101	3	0057	0059	1	IIIGG,U,V
			CULG				0107.5	0112.5	1				II
			CULG				0211.5	0213	2	0211.5	0213	2	IIIG,U
			CULG	0411	0412	2	0411	0412	1				IIIG,U
			CULG	0413	0413.5		0413	0413.5					IIIG,W
			CULG	0427.5	0428	1							DCIM
			CULG				0510.5	0624	1				IIIN
			CULG				0558	0559.5	2				IIIG,V
			CULG	0600	0601.5	2	0600.5	0602.5	3	0600.5	0602	1	IIIGG,V
	2125	2400	CULG				2232	2356					IIIN,W
05	0000	0744	CULG				0107.5	0108	1				IIIB
			CULG				0125.6	0413					IIIN,W
			CULG							0245	0305		S.W.F,W
			CULG				0341	0420					IS,W
	2044	2400	CULG	2044	2400								IN,W
			CULG				2112.5	2113	2				IIIG
			CULG				2113.5	2114	2				IIIG
			CULG	2127	2235	1							IS
06	0000	0743	CULG	0000	0743								IN,W
			CULG				0019						IIIB,W
			CULG				0148.5						IIIB,W
			CULG				0724						IIIB,W
	2044	2400	CULG				2044	2350					IIIN,W
			CULG	2055	0147	1							IS
			CULG				2116	2117	1				IIIG
			CULG				2150	2205	1				IIIN
07	0000	0744	CULG	0245	0413	2							IV
			CULG	0250	0410	2	0307	0744	2				IS,DC
			CULG							0306	0335	2	S.W.F
			CULG				0306	0331	3	0310.5	0320	2	II
			CULG	0413	0635	1	0308	0425	2				IV

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
07			CULG				0420	0442	2				POSS II
			CULG	0635	0744	2							IV
	2043	2400	CULG	2043	2234	1							IN
			CULG				2108	2350					IIIN,W
			CULG	2112.5		1	2112.5		1				IIIB,U
			CULG				2121	2349	1				IIIN,U
08	0000	0743	CULG	0137	0141.5	1							IS
			CULG				0137.5	0141.5	3	0137.5	0138.5	2	IIIGG
			CULG				0212		1				IIIB,Z
			CULG				0331	0334					IIIN,W
			CULG	0400	0743	1							IS
			CULG				0437	0441					RSDP,N
			CULG				0457	0459.5					IIIN,W
	2043	2400	CULG	2100	2230								IN,W
			CULG				2106.5	2107.5	1				IIIG,V
			CULG				2344.5	2345	1				IIIB,U
			CULG				2357		1				IIIB,U
09	0000	0711	CULG				0127	0607.5	1				IIIN
			CULG	0304.5	0310	2	0304.5	0310	3	0305	0310	3	IIIGG
			CULG	0650		1	0650		1				IIIB
	2046	2400	CULG				2258						IIIB,W
10	0000	0743	CULG	0258	0309	1							IN,C
			CULG				0259	0330	1				IS,C
			CULG				0300	0308					IIIS,W
			CULG							0305	0320		S.W.F,W
			CULG	0543	0543.5		0543	0543.5					IIIG,W
			CULG				0546.5	0547					IIIG,W
			CULG	0600	0600.5	2							DCIM
			CULG	0614	0614.5	1							DCIM
	2043	2400	CULG	2137	2137.5		2137	2138					IIIG,W
			CULG				2221.5		1				IIIB
			CULG				2228.5	2229					IIIG,W
			CULG				2329	2329.5					IIIG,W
11	0000	0742	CULG				0117		1				IIIB,U
			CULG				0117	0121					IIIN,W
			CULG				0347.5	0348					IIIG,W
			CULG	0403	0404	2							DCIM
			CULG	0555.5	0559	1	0555.5	0559	3				IIIGG,V
			CULG				0613	0614					IIIG,U,V,W
			CULG				0709.5						IIIB,W
	2042	2400	CULG				2042	2047					IIIN,W
			CULG				2247	2250	2	2248	2250	1	IIIG
			CULG	2334.5	2336.5	1							DCIM,N
12	0000	0942	CULG	0003	0003.5								IIIG,W
			CULG	0055	0016.5	2	0015.5		1				IIIG
			CULG				0157	0424					IIIN,W
			CULG				0316.5		1				IIIB
			CULG				0335.5		1				IIIB
			CULG	0710	0742	1							IN
	2042	2400	CULG				2155	2244					IIIN,W
13	0000	0742	CULG				0736						IIIB,W
	2042	2400	CULG				2135	2400					IIIN,W
14	0000	0740	CULG				0002	0157					IIIN,W
			CULG				0544	0628					IIIN,W
	2042	2400	CULG	2042	2400								IN,W
			CULG				2042	2220	1				IS,C
			CULG				2220	2400					IN,W
			CULG				2254	2347					IIIN,W
15	0000	0741	CULG				0213						IIIB,W
			CULG	0352	0540	1							IN
			CULG				0437.5	0438	2	0437.5	0438	2	IIIG,V
			CULG	0540	0741	1							IS

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15			CULG				0644.5	0645	1				IIIG
			CULG				0656						IIIB,W
			CULG				0657	0658	1				IIIG
			CULG				0713		1				IIIB
			CULG	0715.5	0718	2							DCIM
	2041	2400	CULG	2041	2400		2041	2400					IN,W
			CULG				2114	2116.5	1				IIIG
			CULG				2114		1				IIIB
			CULG				2239	2321	1				DC,N
			CULG				2325.5		1	2325.5		1	IIIB
			CULG				2341	2357	1				II
			CULG				2345	2345.5	1				IIIG
			CULG				2358	2400					IV,W
16	0000	0741	CULG	0000	0741	1							IN
			CULG				0000	0741	1				IS
			CULG				0000	0741	1				IV
			CULG				0011.5	0014					POSS II
			CULG				0018	0741					RSDP,N
			CULG				0058.5	0739.5					IIIN,W
			CULG				0148		1	0148		1	IIIB,U
			CULG				0158		1	0158		1	IIIB
			CULG				0222.5	0223.5	2				IIIG
			CULG	0347	0347.5	1	0346	0347.5	2	0347	0347.5	2	IIIG
			CULG				0421	0510	1				DC,N
			CULG				0547		1				IIIB
			CULG				2041	2342					IIIN,W
			CULG				2041	2400	1				IS,S,DC
	2041	2400	CULG	2041	2400								IN,W
			CULG				2046	2306	1				RSDP,N
			CULG				2047	2113	1				IIIN
17	0000	0740	CULG				0000	0740	1				IS,C,DC
			CULG	0026	0027								DCIM
			CULG				0043	0740	1				RSDP,N
			CULG	0105	0105.5	1							DCIM
			CULG				0120	0641.5					IIIN,W
			CULG							0121.5		1	IIIB
			CULG	0154	0725								IN,W
			CULG	0306.5	0307.5	1							DCIM
			CULG	2041	2400	1							IN
	2041	2400	CULG				2041	2400	1				IS,C
			CULG				2110.5		1				IIIB
			CULG	2203	2205	1							DCIM,N
18	0000	0740	CULG				0000	0740	1				IS,C
			CULG	0000	0740								IN,W
			CULG	0236		1							DCIM
			CULG				0321						IIIB,W
			CULG				0339	0339.5	2	0339	0339.5	1	IIIG
			CULG	0403	0403.5	1							DCIM
			CULG	0410.5	0411.5								DCIM,W
			CULG	0436	0437.5	1	0437	0438.5	2	0437	043.8	2	IIIG
			CULG	0445.5	0446.5	1	0444	0447.5	1	0445.5	0446.5	1	IIIG
			CULG	0526.5	0528	1	0527	0530	2	0527	0529	1	IIIGG
			CULG	0624.5	0625	1							IIIG
			CULG				0707.5		1				IIIB
	2040	2400	CULG	2040	2400	1	2040	2400	1				IS,DC
			CULG				2040	2240	1				CONT
			CULG				2135		1				IIIB
			CULG				2137.5	2138.5	2				IIIG,V
19	0000	0740	CULG	0000	0140	1	0000	0155	1				IS
			CULG				0124.5						IIIB,W
			CULG	0140	0240								IS,W,C
			CULG				0155	0513	1				IS,C,DC
			CULG	0240	0740	1							IN
			CULG	0425	0425.5	1	0426	0427	1				IIIG,V
			CULG				0513	0740					IN,W
			CULG				0725						IIIB,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
19			CULG	2041	2155		2041	2400					IN,W
			CULG	2123.5	2124	2	2123.5	2124	1				IIIG,U
20	0000	0750	CULG				0215		1				IIIB
			CULG	0551.5	0552	2							IIIG
			CULG	0553	0553.5								IIIG,W
	2050	2400	CULG				2050	2400	1				IS,DC
			CULG				2120.5						IIIB,W
			CULG	2121	2123.5	2							IIIG
			CULG				2240		1				IIIB,W
21	0000	0730	CULG	0000	0215	1	0000	0220	1				IS,DC
			CULG				0120						IIIB,W
			CULG				0150.5	0151	1				IIIG
			CULG				0215		1				IIIB
			CULG				0220	0448	1				IN
			CULG	0301.5									IIIB,W
			CULG	0307	0307.5	1							IIIG
			CULG				0325	0326	2				IIIG
			CULG	0404	0406	1	0403.5	0408	3	0404	0406.5	2	IIIG,V
			CULG				0409	0410.5	2				POSS II
			CULG				0422	0433.5	2				II
			CULG				0524		1				IIIB,U
	2035	2400	CULG				2126	2126.5	2				IIIG
			CULG	2133	2155	1							IS
22	0000	0634	CULG				0327		1				IIIB,U
			CULG				0412.5	0416	2	0412.5	0416	2	IIIN
			CULG				0555	0722	1				IIIN
			CULG	0559.5	0600.5	2	0559.5	0601	2				IIIG
			CULG				0704	0705	2				IIIG
	2045	2400	CULG				2058	2400	1				IN
			CULG				2108						IIIB,W
			CULG				2259	2301	2				IIIG,U
			CULG				2332.5	2348	1				DC,N
23	0000	0734	CULG				0000	0131					IS,W
			CULG				0011	0734	1				IIIN
			CULG				0041	0734					IIIN,W
			CULG	0109	0109.5	2							IIIG
			CULG				0146.5	0153	1				II
			CULG				0303	0304	2				IIIG
			CULG				0320.5	0321.5	2				IIIG,U
			CULG	0350	0525	1	0340	0356	1				IN
			CULG				0552.5		2				IIIB
	2040	2400	CULG				2040	2400	1				IIIN
			CULG				2121.5		2				IIIB
			CULG				2301	2300.5	3	2302	2302.5	1	IIIG
24	0000	0740	CULG				0000	0725					IIIN,W
			CULG				0007.5	0444	2				IIIN
			CULG				0015	0644	1				IIIN
			CULG				0051.5		1				IIIB
			CULG				0103.5	0104.5	2	0103.5	0104	1	IIIG
			CULG							0149.5	0442	1	IIIN
			CULG	0215.5	0216	2	0215.5	0217	2				IIIG,V
			CULG	0302	0303	2	0302.5	0303.5	2				IIIG
	2040	2400	CULG				2040	2400					IIIN,W
			CULG				2040	2137					IS,W
			CULG	2040	2145	1							IS
			CULG				2044	2304					DP,W,N
			CULG				2045	2359					IIIN
			CULG				2054.5	2055	2				IIIG
			CULG				2056	2320	1				RSDP,N
			CULG	2145	2400								IS,W
			CULG				2210.5		2	2210.5		2	IIIB
			CULG	2236	2236.5	1	2236	2236.5	2	2236	2236.5	2	IIIB
			CULG				2239	2357.5		2239	2357.5		IIIN,W
			CULG	2328	2329	1							IIIG
25	0000	0316	CULG				0000	0316					IIIN,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
25			CULG				0000.5	0002	3	0000.5	0001.5	2	IIIG,V
			CULG				0008	0257	1	0008	0151	1	IIIN
			CULG				0110	0203	2	0110	0203	2	IIIN
			CULG				0118.5	0119.5	3	0118.5	0119	3	IIIG,V
			CULG							0142	0151		SWF,W
			CULG				0508	0726					IIIN,W
	0503	0738	CULG				0508		3				IIIB
			CULG	0519.5	0520								IIIG,W
			CULG	0532	0738								IN,W
			CULG				0550.5		2				IIIB
			CULG	0646.5	0647	3							DCIM
			CULG				2039	2341					IIIN,W
	2039	2400	CULG	2039	2400	1	2039	2400	1				IS,DC
			CULG				2043	2054	1				IIIN
			CULG				2308	2309.5	1				IIIG,U
			CULG				2309		1				IIIB,V
			CULG				2309.5	2310	2	2309.5	2310	2	IIIB
			CULG				2344.5		2				IIIB
26	0000	0738	CULG	0000	0738	1							IS
			CULG				0000	0738					IIIN,W
			CULG				0000	0154					IN,W
			CULG	0032.5	0033	3	0032	0034.5	3	0032	0033.5	3	IIIG,V,U
			CULG				0034	0725.5	1				IIIN
			CULG				0154	0235	1				IS,C
			CULG				0206.5	0207.5	2	0206.5	0207	1	IIIG
			CULG				0235	0314					IN,W
			CULG				0340	0340.5	1				UNCLF
			CULG				0422	0422.5	1	0422	0422.5	1	IIIG
			CULG	0422	0422.5	2							DCIM
			CULG	0547.5	0547.5	3	0547.5	0550.5	3				IIIGG,V,Z,
			CULG							0550	0554		SWF,W
			CULG				0555.5	0558.5					II, W
			CULG	0706	0707	1	0706.5	0707.5	3				IIIG,U
			CULG				0735		2				IIIB
	2039	2400	CULG	2038	2210	1	2038	2400	1				IS,C,DC
			CULG				2038	2400					IIIN,W
			CULG				2047	2047.5	2				IIIG
			CULG				2123	2329	1				IIIN
			CULG	2137	2138.5	2	2138	2138.5	2				IIIG
			CULG				2143		3				IIIB
			CULG				2147		2				IIIB
			CULG				2154		2				IIIB
			CULG				2159	2200	2				IIIG
			CULG	2210	2400								IN,W
			CULG	2240	2256	2							IIIN
			CULG				2247		3	2247		1	IIIB
27			CULG				0000	0730					IIIN,W
	0000	0738	CULG	0000	0330								IS,W
			CULG				0000	0300	1				IS,C,DC
			CULG				0007	0725	1				IIIN
			CULG	0021	0242	1							DCIM,N
			CULG				0023.5	0724	2	0024	0311	1	IIIN
			CULG				0030.5	0031.5	3	0031	0031.5	1	IIIG
			CULG	0211.5	0216	1							CONT
			CULG				0300	0738	1				IN
			CULG	0302	0302.5	2							DCIM
			CULG	0330	0738	1							IS
			CULG	0408.5	0411	2	0407.5	0412.5	3	0407.5	0411.5	2	IIIGG,V
			CULG	0414	0414.5	2	0414	0414.5	2				IIIG
			CULG				0638.5	0641.5	1				RSDC
	2038	2400	CULG	2038	2250								IN,W
			CULG				2038	2400					IIIN,W
			CULG				2038	2400	1				IS,C
			CULG	2230	2231	1							IIIG
			CULG				2253		1				IIIB
28			CULG				0000	0447					IS,W
	0000	0737	CULG				0000	0412.5	1				IN

SOLAR RADIO EMISSION
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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
28			CULG				0018	0726					IIIN,W
			CULG				0029.5	0030	1				IIIG
			CULG	0145	0156	1							IIIN
			CULG				0147.5	0149	2	0147.5	0148	1	IIIG
			CULG				0150	0151.5	1				IIIG
			CULG	0304	0307.5	1	0304	0308	3	0305.5	0308	2	IIIGG,V
			CULG				0310.5	0314	1				II
			CULG				0357.5		2	0357.5		1	IIIB
			CULG	0432	0434	1							CONT
			CULG	0433	0737	1							IN
			CULG	0433.5	0434.5	1	0431.5	0431.5	2				IIIGG
			CULG				0438.5	0443	1				IIIN
			CULG				0519	0657	2				IIIG,N
			CULG	0617	0721.5	2	0617	0721.5	3				IIIN
	2037	2400	CULG	2041	2307		2037	2400					IIIN,W
			CULG				2043	2237.5	2				IIIN
			CULG				2047.5	2158	1				IIIN
			CULG	2150	2400								IN,W
			CULG	2201	2201.5	1	2201	2201.5	2				IIIG
			CULG				2305	2306.5	1				DC
29	0000	0736	CULG	0000	0736								IN,W
			CULG				0006	0736					IIIN,W
			CULG	0140.5	0141.5	3	0140.5	0142.5	3	0140.5	0142.5	3	IIIG,V
			CULG				0142.5		1	0142.5		1	IIIB
			CULG				0159	0200	2	0159.5	0200	2	IIIG,U
			CULG				0345	0724	1				IIIN
			CULG				0346.5	0738	2				IIIN
			CULG	0415	0417	2	0415.5	0417	2	0416	0417	2	IIIG
			CULG	0420	0458	1							IIIN
			CULG	0423	0424	3	0423	0424.5	3	0423.5	0424	3	IIIG,V
			CULG				0430.5	0433	1				II
	2039	2400	CULG				2039	2307					IIIN,W
			CULG	2105	2300	2							IIIN
			CULG				2115.5		1				IIIB
			CULG	2223	2223.5	3							IIIG
			CULG	2241	2400								IS,W
			CULG	2330.5	2331.5	1							DCIM
			CULG				2357		1	2357		1	IIIB
30	0000	0737	CULG				0002	0245					IIIN,W
			CULG				0050	0050.5	2				IIIG,U
			CULG	0112.5	0113	2							IIIG
			CULG	0121	0530	1							IN
			CULG	0233	0244.5	1							IIIS
			CULG	0238.5	0239	3	0237.5	0241	3	0238.5	0240.5	2	IIIG,V
			CULG							0240	0244		SWF,W
			CULG	0305.5	0306	1							IIIG
			CULG				0435.5		1				IIIB
			CULG	0510.5	0511	2							IIIG
			CULG	0522	0528	1							DCIM,N
			CULG				0527.5		1				IIIB
			CULG	0529	0737	3							IV
			CULG							0537	0550	2	SWF
			CULG	0537.5	0542	3	0537.5	0558	3				II H
			CULG				0539	0739	3				IV
	2037	2400	CULG				2037	2400					IIIN,W
			CULG				2056	2057.5	1				IIIG
			CULG	2056.5	2057	1							DCIM
			CULG	2056.5	2356	1	2056	2107	1				IN
			CULG				2058	2100	3				IIIGG
			CULG	2058.5	2100	3							DCIM
			CULG				2145.5	2357	1				IIIN
			CULG	2250.5	2253	1							DCIM
			CULG				2252	2253	3				IIIG
			CULG				2331.5		2				IIIB
			CULG				2346		1	2346.6		1	IIIB
			CULG				2355.5	2357	2				IIIG
31	0000	0736	CULG				0005	0627					IIIN,W

SOLAR RADIO EMISSION
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MARCH 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
31			CULG				0012	0152	1				IIIN
			CULG				0022.5	0023.5	2				IIIG
			CULG	0029	0142	3							DCIM,N
			CULG				0041.5	0043.5	3	0041.5	0043.5	2	IIIG,V
			CULG	0131	0131.5	3	0130.5	0131.5	3	0130.5	0131	3	IIIG,V
			CULG				0133.5	0135.5	3	0133.5	0135	2	IIIGG
			CULG	0145.5	0205	1							IIIN
			CULG				0410	0728	2				IIIN
			CULG				0420	0421.5	3	0420.5	0421	2	IIIG,V
			CULG	0420	0421	1							DCIM
			CULG				0428		3				IIIB,U
			CULG	0533	0533.5	1							DCIM
			CULG				0533	0535	3	0533.5	0534	2	IIIG,V
			CULG	0554	0555	2							IIIG
			CULG				0735	0736	3				IIIG
	2036	2400	CULG				2040	2400					IIIN,W
			CULG				2146.5	2147.5	2				IIIG
			CULG	2147.5		3	2147.5		3				IIIB
			CULG				2148	2351	1				IIIN
			CULG				2224.5		2				IIIG
			CULG	2224.5	2225	3							DCIM
			CULG							2225.5	2230		SWF,W

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1982

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
01	0000	0736	CULG				0005		2				IIIB
			CULG				0011	0532					IIIN,W
			CULG	0237	0245	1							IS
			CULG				0245.5	0256.5	1				IIIN
			CULG				0250.5	0252	2				IIIG
			CULG				0253	0253.5	3	0253	0253.5	1	IIIB
			CULG				0511.5	0513					IIIG,W
			CULG	0511.5	0513	2							IIIG
			CULG				2036	2123					IN,W
			CULG				2129.5	2130	1				IIIG
			CULG	2201	2202	2							IIIG
			CULG				2240	2245.5	1				IIIS
02	0000	0736	CULG	0012.5	0013.5	1							IS
			CULG				0029	0715					IIIN,W
			CULG	0037		2							IIIB
			CULG				0117.5	0118.5	1				IIIG,U
			CULG	0220	0220.5	3	0220	0220.5	2				IIIG
			CULG	0220.5		1							IIIB
			CULG				0222		2				IIIB
			CULG	0304	0625	1							IN
			CULG	0342	0342.5	1							IIIG
			CULG				0636		2				IIIB,U
			CULG	0720	0720.5	1							IIIG
	2036	2400	CULG	2116	2300	1							IN
			CULG				2133.5	2349					IIIN,W
			CULG	2323.5	2324	2							IIIG
			CULG	2348	2348.5	1							IIIG
			CULG				2348		1				IIIB
03	0000	0735	CULG				0039	0143.5					IIIN,W
			CULG				0241	0242.5	2				IIIG
			CULG				0515.5		1				IIIB,U
			CULG	0536	0613	1							IIIN
			CULG				0545	0647					IIIN,W
			CULG	0636.5	0716.5	2							IIIN
			CULG				0643.5	0644.5	3				IIIG
			CULG	0646.5	0647	1							DCIM
	2036	2400	CULG				2149	2343					IIIN,W
			CULG				2157.5		1				IIIB
04	0000	0735	CULG	0119	0254	1							IN
			CULG				0124.5	0615.5	1				IIIN
			CULG				0147	0619					IIIN,W
			CULG	0320	0320.5	1	0320	0320.5	1				IIIG
			CULG	0435	0435.5	1							IIIG
			CULG	0554.5		2							IIIB
			CULG	0613.5	0628	1							IIIN
			CULG				0618	0618.5	2				IIIG
			CULG				0707		2				IIIB
	2035	2400	CULG										
05	0000	0735	CULG				0118.5						IIIB,W
			CULG	0119	0120.5								IIIG,W
			CULG	0126.5		1							IIIB
			CULG	0151.5	0154	2	0152	0159	1				IIIS
			CULG				0155		2				IIIB
			CULG	0203	0203.5	1							DCIM
			CULG	0301	0305		0301	0304.5					IIIGG,W
			CULG				0603	0604					IIIG,W
			CULG	0603	0735	1							IN
			CULG	0610.5		1							IIIB
	2035	2400	CULG	2035	2220								IS,W
			CULG	2102.5	2104.5	1							IIIG
			CULG				2103	2104					IIIG,W
			CULG	2130.5	2133	2	2130.5	2133	1				IIIGG
			CULG	2220	2400								IN,W
			CULG	2300	2300.5	1							IIIG
06	0000	0735	CULG	0207.5	0210	1							IIIN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1982

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
06			CULG	0431.5	0432.5	2	0431.5	0432	2				IIIG
			CULG	0437	0437.5	2	0437	0437.5	3				IIIB,U
			CULG				0606.5	0609.5					IIIN,W
			CULG	0609	0609.5								DC,M,W
			CULG	0701.5	0702.5	1	0701.5	0702.5	1				IIIG
			CULG	0721.5	0723	3	0721.5	0723	2				IIIGG,U
	2035	2400	CULG										
07			CULG				0219	0222	2				IIIN
	0000	0734	CULG	0219	0222		0219	0234					IIIS,W
			CULG				0230.5	0231	1				IIIG
			CULG				0251.5	0314					IS,W
			CULG				0256.5	0258					POSS II,W
			CULG	0641	0706	1							IIIN
	2035	2400	CULG										
08	0000	0734	CULG				0401	0409					IIIN,W
	2035	2400	CULG										
09	0000	0734	CULG	0149	0202	1							IIIN
			CULG				0233.5	0234	1				IIIG
			CULG	0233.5	0234.5								IIIG,W
			CULG	0238.5	0239		0238.5	0239					IIIG,W
			CULG				0546	0726					IIIN,W
	2034	2400	CULG	2040	2250	1							IS,DC
			CULG				2055	2230					IIIN,W
			CULG				2219	2220	2				IIIG
10	0000	0734	CULG				0106	0405					IN,W
			CULG				0113	0720					IIIN,W
			CULG				0135	0220	1				IS
			CULG	0153	0220	1							CONT
			CULG				0220.5	0221.5	1				POSS II
			CULG				0303		1				IIIB
			CULG	0625	0630	1	0625	0628.5	1				IIIN
			CULG	0650	0657	1							IN
	2034	2400	CULG	2034	2400	1							IS
			CULG	2334	2336.5	3	2334	2337.5	3				IIIG
11	0000	0733	CULG	0000	0020	1							IS
			CULG				0003	0412					IN,W
			CULG	0020	0257								IS,W
			CULG				0028.5	0029.5	1				IIIG
			CULG	0138	0338	2							IIIN
			CULG	0257	0615	1							IS,DC
			CULG				0328.5		2				IIIB
			CULG				0334	0553					IIIN,W
			CULG				0412	0733					IS,W
			CULG	0506	0507	2							DCIM
			CULG	0615	0733	1							IN
	2040	2400	CULG				2201.5	2355					IIIN,W
			CULG	2201.5	2355	1							IIIN
			CULG				2207	2207.5	2				IIIB,U
			CULG	2250	2357	2							IIIG,N
			CULG	2309.5	2310	3	2309.5	2310	3	2309.5	2310	2	IIIG
			CULG				2313		1				IIIB
			CULG				2352	2353.5	1				IIIG
			CULG				2353		3	2353		1	IIIB
12	0000	0733	CULG	0009	0013		0010	0733					IN,W
			CULG				0027	0636					IIIN,W
			CULG	0027	0509	1							IIIN
			CULG	0028.5		2	0028.5		1				IIIB
			CULG	0138.5	0139.5	3							IIIG
			CULG				0159	0200	3	0159	0159.5	2	IIIG
			CULG	0407.5	0408	2							IIIG
			CULG				0501	0503	1				IIIG
			CULG				0520.5		1				IIIB
			CULG				0604		2				IIIB
			CULG				0619.5		2				IIIB

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

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DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
12			CULG	0632	0635								CONT
	2034	2400	CULG				2034	2334					IN,W
			CULG				2046	2254					IIIN,W
			CULG				2052.5	2053	2				IIIG
			CULG	2104.5	2105		2104.5	2105					IIIG,W
			CULG				2228.5	2229	3				IIIG
			CULG	2239	2312								IS,W
			CULG	2239.5		1	2239.5		1				IIIB
13	0000	0722	CULG				0003	0330					IIIN,W
			CULG				0010.5	0030					IN,W
			CULG	0117.5		1							IIIB,U
			CULG				0335.5		2				IIIB,U
			CULG				0621	0621.5	2				IIIG
			CULG				0632.5	0634	3				IIIG
	2034	2400	CULG	2037	2400	1							IS
			CULG				2037	2037.5					IIIG,W
			CULG	2039.5	2040		2039.5	2040					IIIG,W
			CULG				2114		1				IIIB,U
			CULG				2115	2116.5					IIIG,W
			CULG				2143	2144					IIIG,W
			CULG				2250	2400	1				IS
14	0000	0733	CULG	0000	0525	1	0000	0200	1				IS,DC
			CULG				0008	0733					IIIN,W
			CULG	0043			0043						IIIB,W
			CULG	0100	0102	1	0100.5	0101.5	3	0100	0101.5	2	IIIG
			CULG				0105.5		2	0105.5		2	IIIB
			CULG				0200	0225					IN,W
			CULG				0233	0250	2				P
			CULG				0234	0302	2	0235	0258	2 2	IIIS
			CULG	0235	0310	1	0233	0430	1				CONT
			CULG				0239	0247.5	3				IIIN
			CULG				0310.5		1				IIIB
			CULG				0515	0730					IS,W
			CULG	0525	0733	1							IN
			CULG	0604	0605	1	0604	0605	1				IIIG
	2033	2400	CULG	2033	2346	1							IN
			CULG				2039	2349					IIIN,W
			CULG				2142	2142.5	1				IIIG
			CULG				2216		2				IIIB
			CULG	2348.5	2349	1							IIIG
15	0000	0733	CULG	0025	0733								IN,W
			CULG				0032	0526					IIIN,W
			CULG				0145	0145.5	1				IIIG
			CULG				0430	0606					IN,W
			CULG				0448	0449	3				IIIG,U
			CULG	0457	0520	1							CONT
	2033	2400	CULG				2104.5	2105.5					IIIG,W
			CULG	2216		1							IIIB
			CULG	2226	2226.5		2226.5						IIIG,W
			CULG	2327	2356		2327	2354					IIIN,W
16	0000	0732	CULG				0021	0726					IIIN,W
			CULG	0226.5	0227.5	1	0227	0227.5	1				IIIG
			CULG	0228.5	0230	2	0228.5	0230	2				IIIG
	2032	2400	CULG	2032	2340		2032	2145					IN,W
			CULG				2045	2346					IIIN,W
			CULG	2055.5	2127.5	2							DC,N
			CULG	2141.5	2147.5	2	2142		2				IIIG
17	0000	0732	CULG				0132	0732					IS,W
			CULG	0512	0732								IN,W
			CULG				0514		1				IIIB
			CULG				0514	0732					IIIN,W
	2032	2400	CULG	2032	2220	1	2032	2125	1				IS
			CULG				2036	2255					IIIN,W
			CULG				2205.5		1				IIIB
			CULG				2230	2400	1				IS

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1982

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
17			CULG	2255	2400								IIIS,W
			CULG				2318	2349	1				IIIN
			CULG				2325	2325.5	2				IIIG
18	0000	0025	CULG				0000	0025					IS,W
			CULG				0000	0025					IIIS,W
	0131	0720	CULG				0131	0720					IS,W
			CULG				0131	0137	1				IIIS
			CULG	0134.5		1	0134.5		2				IIIB
			CULG	0135.5		2	0135.5		2				IIIB
			CULG	0136.5	0137	2	0136.5	0137	2	0136.5	0137	1	IIIG
			CULG				0137	0204					IIIN,W
			CULG				0204	0220	1				IIIS
			CULG	0219.5		2	0219.5		3	0219.5		2	IIIB
			CULG				0220	0720					IIIN,W
			CULG	0241.5	0552	1	0241.5	0552	2	0241.5	0341	1	IIIN
			CULG				0245	0526	2				IIIG,N
			CULG	0318	0720								IN,W
			CULG	0327.5		1	0327.5	0328.5	3	0328		2	IIIG
			CULG	0358	0405	2	0357.5	0405	3				IIIS
			CULG	0541	0541.5	2	0541	0541.5	3				IIIG
			CULG	0545.5	0547.5	3	0545.5	0547.5	3				IIIGG
			CULG	0555.5		1	0555.5		3				IIIB
			CULG	0649.5	0652	1	0649.5	0652	3				IIIGG
			CULG				2119	2337					IIIN,W
	2035	2400	CULG				2119		2				IIIB
			CULG				2132	2340	1				IS
			CULG				2144	2325	1				IIIN
			CULG				2156	2157.5	3				IIIG
			CULG				2312	2315	3				IIIG
			CULG				2315	2328	2				IIIN
19	0000	0740	CULG				0419	0425	2				IIIGG
	2030	2400	CULG				2210	2211	1				IIIG
20	0000	0700	CULG				0210.5						IIIB,W
	2110	2400	CULG				2121	2157.5					IIIN,W
21	0000	0730	CULG				0027.5						IIIB,W
			CULG				0058		2				IIIB
	2115	2400	CULG				2240	2400					IIIN,W
			CULG				2249	2400	1				IIIN
22	0000	0730	CULG				0002	0719					IIIN,W
			CULG				0043	0650	1				IIIN
			CULG				0401.5	0545					IIIN,W
			CULG				0402	0403	2				IIIG
			CULG				0450	0730	1				IS,DC
			CULG				0528		2				IIIB
	2040	2400	CULG				2040	2400	2				IS,C,DC
			CULG				2059	2237					IIIN,W
			CULG				2146		1				IIIB
23	0000	0730	CULG				0000	0100	2				IS,C
			CULG				0003		2				IIIG
			CULG				0100	0730	1				IS,C
	2032	2400	CULG	2032	2400	1	2032	2400	1				IN,C
			CULG				2036	2141	1				DC,N
			CULG				2047	2400					IIIN,W
24			CULG										IIIN
	0000	0730	CULG										IN,W
			CULG	0000	0730								IS,W
			CULG	0000	0730								IS,W
			CULG	0635.5	0637								DCIM,W
	2030	2400	CULG	2035	2305		2040	2254					IN,W
			CULG				2042	2350					IIIN,W
25	0000	0730	CULG	0026.5	0231		0013	0649					IIIN,W
			CULG				0158.5	0159	2	0158.5	0159	1	IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1982

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
25			CULG	0616	0730	1							IS
			CULG				0629.5		2				IIIB
	2030	2400	CULG				2144	2321					IIIN,W
			CULG	2230	2256								IS,W
26			CULG				0023	0044					IIIS,W
			CULG				0028.5	0033	1				IIIN
	0000	0730	CULG				0045	0621					IIIN,W
			CULG	0112	0138								IN,W
	2030	2400	CULG				2057.5		1				IIIB
			CULG				2322	2329.5					IIIN,W
			CULG				2353	2400					IS,W
27	0000	0730	CULG				0000	0018	1				IS
			CULG				0252.5	0253	1				IIIG
			CULG				0313	0633					IIIN,W
			CULG				0350.5	0351	2				IIIG
			CULG				0625.5	0627	3				IIIG,V,U
	2030	2400	CULG	2124.5		1							DCIM
28	0000	0730	CULG				0222.5		2				IIIB
			CULG				0231	0231.5	3	0231	0231.5	2	IIIB,U
			CULG	0423	0423.5		0423						IIIB,W
			CULG				0425	0425.5	2				IIIG
			CULG				0607		2				IIIB
			CULG				0705.5						IIIB,W,U
	2030	2400	CULG				2138.5	2140					IIIG,W
			CULG				2228						IIIB,W
29	0000	0730	CULG				0005	0037.5					IIIN,W
			CULG				0435.5	0436					IIIG,W
	2030	2400	CULG				2110.5	2152					IIIN,W
30	0000	0729	CULG				0115.5						IIIB,W
			CULG				0217.5	0218.5	1				IIIG
			CULG				0256.5						IIIB,W
	2030	2400	CULG				2048.5						IIIB,W

PIONEER XII (VENUS ORBITER)

Interplanetary Magnetic Field Magnitudes

MARCH 1982

DAY	TIME	BMAG (GAMMAS)
1	13:39:30	13.80
2	13:39:50	10.10
3	13:39:40	12.20
4	13:39:40	8.30
5	13:39:40	6.50
6	13:40:00	12.60
7	13:39:50	18.20
8	13:40:00	15.20
9	13:39:50	25.20
10	13:40:30	8.00
11	13:40:40	9.10
12	13:40:50	25.10
13	13:40:40	15.00
14	13:41:00	16.30
15	13:41:20	10.98
16	13:41:20	9.35
17	13:41:00	13.19
18	13:41:10	17.67
19	13:41:50	14.92
20	13:41:20	11.00
21	13:41:30	16.60
22	13:41:40	12.50
23	13:41:40	11.50
24	13:41:40	17.60
25	13:41:30	15.51
26	13:41:00	14.12
27	13:41:20	10.44
28	13:41:20	10.37
29	13:41:00	7.82
30	13:41:50	11.67
31	13:41:40	7.28

APRIL 1982

DAY	TIME	BMAG (GAMMAS)
1	13:40:50	27.85
2	13:41:30	11.02
3	13:41:10	11.59
4	13:40:50	14.08
5	13:40:30	13.21
6	13:40:50	14.82
7	13:41:30	15.70
8	13:41:20	11.00
9	13:40:50	12.45
10	13:41:10	12.60
11	13:41:20	10.65
12	13:41:10	9.81
13	13:41:20	10.73
14	13:41:10	12.43
15	13:41:00	21.05
16	13:41:50	13.72
17	13:41:00	10.98
18	13:41:20	10.68
19	13:41:20	9.41
20	13:40:40	16.90
21	13:41:20	16.12
22	13:40:50	17.73
23	13:41:40	16.99
24	13:40:50	9.42
25	13:41:00	11.58
26	13:41:10	10.10
27	13:41:50	6.07
28	13:41:20	7.02
29	13:41:10	6.64
30	13:42:20	6.32

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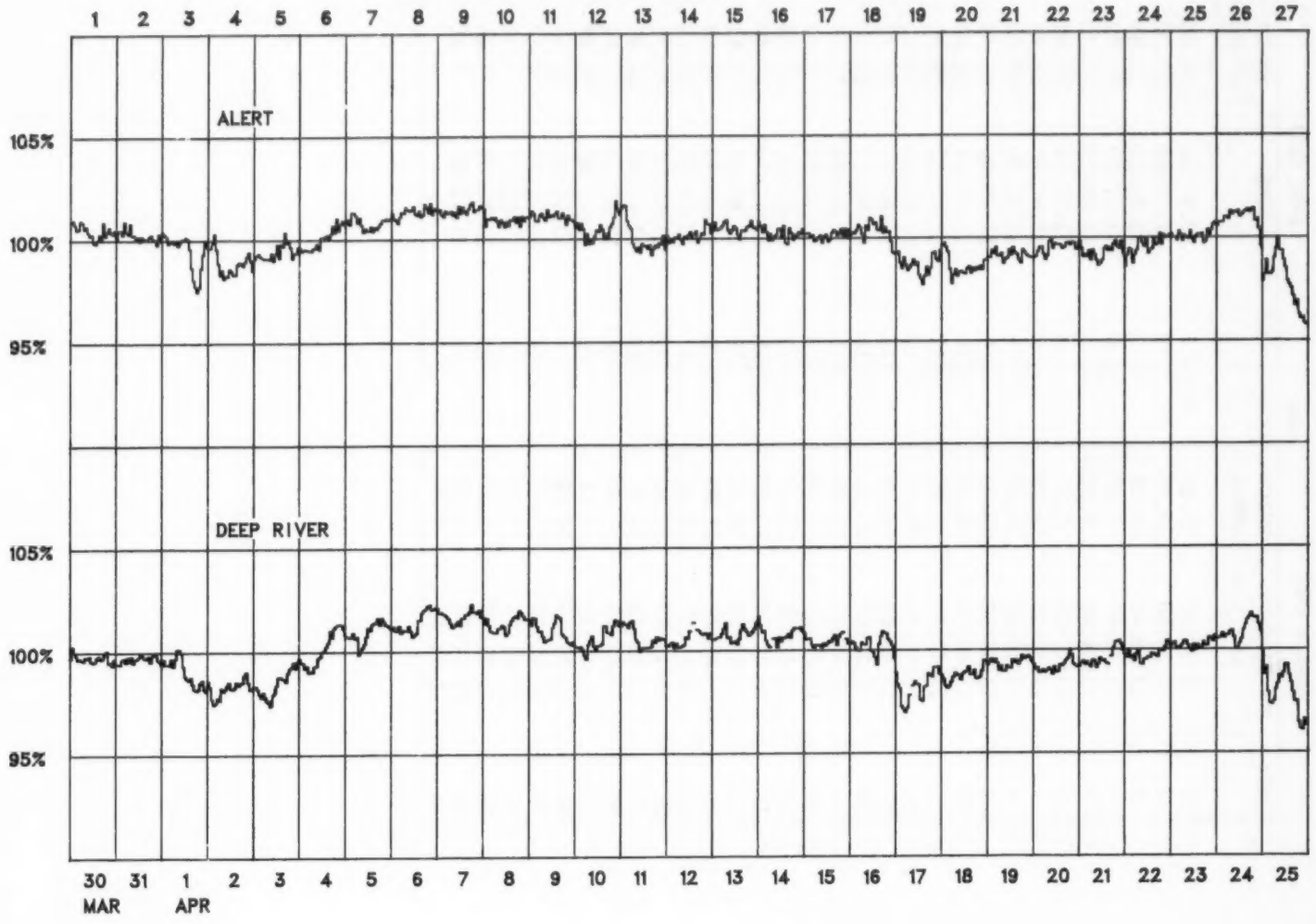
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2032 (March 1982–April 1982)



COSMIC RAY INDICES

(Neutron Monitors)

APRIL 1982

April 1982	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	6749.5	6372.9
2	6710.9	6322.1
3	6745.3	6334.6
4	6788.7	6441.0
5	6840.2	6495.8
6	6876.2	6526.0
7	6880.8	6545.0
8	6848.7	6521.9
9	6860.1	6497.8
10	6819.1	6470.6
11	6785.5	6478.0
12	6796.8	6472.6 (22)
13	6818.8	6485.5 (23)
14	6801.8	6484.2 (23)
15	6794.8	6463.7 (23)
16	6808.0	6452.9 (23)
17	6697.9	6321.0 (23)
18	6691.8	6355.6
19	6728.4	6394.3
20	6752.5	6381.9
21	6738.7	6408.9 (23)
22	6758.6	6418.8
23	6792.9	6450.0
24	6852.0	6492.0
25	6639.1	6302.0
26	6565.1	6234.2
27	6650.0	6325.3
28	6694.9	6369.2
29	6700.7	6367.0
30	6707.5	6378.1
Mean	6763.2	6418.8

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

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